The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

VOLUME LIII CHICAGO, ILLINOIS, AUG. 14, 1909 NUMBER 7

Addresses

WHAT THE INDIVIDUAL PHYSICIAN CAN DO TO IMPROVE THE MATERIA MEDICA *

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The subject of this address is, I believe, one of much importance to the physician, both as an individual and as a member of a learned and dignified profession, but a profession which has allowed itself to be imposed on and permitted even its dignity to be lowered and its usefulness lessened by certain influences both within and without. So much has been said in recent years on the subject of proprietary medicines that I might hesitate to bring it up again if the times did not seem so opportune for constructive work, and work in which the individual physician can and must take the leading part.

Before entering on this discussion, however, a few words may be said concerning the place of drug therapeutics in the practice of medicine. The best energies of the profession for almost a generation have been devoted to the discovery of the causes, and methods for the prevention, of disease, and to the development of surgical technic and to the improvement of diagnosis; the greatest successes have been achieved in these directions. These developments have concerned the public and certain specialties rather more directly than the general practitioner who is confronted with concrete and individual cases. The individual patients have profited by these discoveries, but not perhaps so much as has the public.

Forms of treatment other than with drugs are rapidly being developed and it is recognized that some of these methods have not received the general recognition they deserve and are not taught in the medical schools as well as is desirable. Most physicians are probably less skilled in the use of baths, diet, massage, etc., than they are in the use of drugs. And it is probable that these forms of treatment will receive full consideration before there occurs that further development of drug therapeutics for which the future seems so bright.

The important rôle drugs play in medicine is, however, frequently overlooked; it may be well to recall sometimes Naunyn's remark, that were it not for five or six drugs he would not care to be a physician at all. Surgeons especially are prone to forget the influence which drugs have had on their art. More than a century ago an eminent surgeon expressed the opinion that his specialty had almost reached the highest conceivable degree of perfection. This might have been true were it not for the lessons of asepsis learned largely from the use of antiseptic drugs and the discovery of general and local anesthetics.

The facts that there are other forms of treatment which need as careful study and teaching as that of drugs and that the field of activity of the physician in connection with the prevention of disease is ever widening are not valid arguments for neglecting drugs. They are, however, potent arguments for systematizing the study and use of the latter so that the best results may be obtained with the least expenditure of time and energy. Is this the case at the present time? An affirmative answer would imply that physicians do not begin with a handicap of ignorance and misrepresentation as to what they are using. That the profession in the past has been most shamefully imposed on in this respect is too well known to require any discussion; in the volume, "Propaganda for Reform in Proprietary Medicines," issued by the American Medical Association, will be found sufficient evidence, and the cases there quoted are only types of many.

Some seem to be under the impression that the profession is sufficiently awake to evils of the character discussed in the "Propaganda for Reform" and that deceptions such as those there exposed are no longer possible. There have undoubtedly been great improvements, but that the physician needs sources of information concerning new drugs other than the statements of those who are financially interested may easily be shown by a few examples.

It may be well to refer first to a case which has been practically settled, for the manner in which it was settled is instructive. In 1885 acetanilid, a simple chemical compound long known to chemists, was introduced into medicine. The name acetanilid is the true chemical name of the substance; it is not especially long or difficult to remember. Another name, "antifebrin," one not even suggesting the composition of the substance, was soon applied to it and has been in more or less extensive use ever since. While most physicians now know that the two names are applied to exactly the same compound, there was for years much confusion and cases are reported of eminent physicians who, not satisfied with the effects of "acetanilid," turned to "antifebrin." Every medical student must learn that the two are identical and it is often some time before he remembers whether antifebrin is another name for antipyrin or for phenacetin or for acetanilid. Even at present, when acetanilid has been included under its true name in most of the pharmacopeias of the world, if the physician turns to one of the leading handbooks supplied to him by the manufacturers he will find under antifebrin nothing to indicate that this is the same as the official acetanilid unless his knowledge of chemistry is sufficiently fresh for him to recognize the compound from its chemical formula. These two names for the same compound have already been in the medical literature of the world for nearly a generation and will continue to cause confusion and annoyance so long as the writings of this *period are read.*

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* Address before the West Branch of the Philadelphia County Medical Society, May 14, 1909.

Scores of similar cases have occurred and are occurring at the present time. New names for old drugs are often introduced in a manner to lead the physician to suppose that a new drug is being introduced. For example, I recently received a circular on "soamin" from a leading English firm. In this it is stated that "the arylarsonate 'soamin' was first introduced at the end of 1907," and there is nothing in the circular to indicate that the same substance had been introduced by another firm several years previously under the name "atoxyl" or that the compound itself had been made in 1863 by Béchamp. A little further on in this circular I read: "The toxic symptoms noticed by continental physicians when using other arylarsonates have *not been observed with soamin." As a matter of fact,* most of the toxic symptoms noticed by continental writers were due to the same substance but under a different name.

*The history of many of the recently introduced syn*thetics is the same and is about as follows: Some manufacturer discovers in a compound long known to chemists therapeutic virtues or sometimes properties which lend themselves to commercial exploitation as therapeutic virtues. The compound itself and the methods by which it is made having long been public property the manufacturer can derive profit only if he can persuade the medical profession to prescribe it under some new trade-marked or copyrighted name invented by himself. Then in a short time the same substance is put on the market by other firms whose sole contribution is a new and often misleading name; in this way there are sometimes introduced for the same compound a dozen names often as dissimilar as human ingenuity can make them. In the confusion which results really new drugs are apt to be overlooked. Thus a short time ago an eminent American physician, not being satisfied with the results he had obtained in certain cases with "atoxyl," had, upon the advice of a well-known English practitioner, been experimenting with "soamin" (with equally unsatisfactory results); neither he nor another physician whom I met about the same time had thought it worth while to try the acetyl derivative of this substance because they were under the impression that this was "about the same as atoxyl." Yet this acetyl derivative is the result of months of work by one of the master minds in medicine (Ehrlich) and certainly well worthy of a trial.

The evil results of this pernicious practice of applying many names to the same substance does not end here, however. Other manufacturers add the "new drug" to complex mixtures, inventing still more new names or, with apparent frankness, naming the mixture after some other but unimportant ingredient. In this way physicians have been led to prescribe unwittingly some powerful habit-forming drugs.

Closely connected with this question of names is another evil—the direct introduction of powerful drugs to the laity. The attitude of the medical profession in disapproving of this practice is often misunderstood. As in so many other cases, self interest is stated to be the prime cause: Lady Montagu thought physicians would oppose the introduction of inoculation for smallpox because she did not think they had "virtue enough to destroy such a considerable branch of their revenue [from treating smallpox] for the good of mankind"; now antivaccinationists state that the profession upholds vaccination for the sake of the trifling fees. *Physicians discourage the use of powerful drugs by the* laity for the same reasons that they advocate vaccination and other measures against the spread of contagious diseases—for the good of the public. The Council on Pharmacy and Chemistry adopted as a rule that it would not approve an article advertised to the public except in the cases of foods and disinfectants; in explanation of this rule the Council states the objection to such advertising, in part, as follows, ". . . the well-known dangers of suggesting by descriptions of symptoms to the minds of the people that they are suffering from the very diseases described the dangers of an unconscious and an innocent formation of a drug habit, and the evils of harmful self-medication, including the dangers of the spread of many infectious and *contagious diseases when hidden from the physician."*

One of the most effective means of inviting or encouraging self-medication is the use of catchy, often therapeutically suggestive, names. A striking illustra*tion of the harm a layman may do himself with power*ful drugs is reported in a recent number of the *Lancet:* A man believed he had contracted syphilis and took "soamin" in increasing doses until he was severely poisoned. The physician, called in on account of the poisoning, found no indications of syphilis. This case well illustrates one of the chief dangers of self-medication —the absence of correct diagnosis. There is no reason to believe that the firm exploiting soamin had endeavored to persuade the laity to use it without medical advice, but the use of a scientific name (sodium arsanilate, for example) would probably have prevented such misuse and would at the same time convey a definite meaning to the physician.

Many firms make a practice of using names and trade packages which will lead to the introduction of their preparations to the laity as rapidly as possible. Striking illustrations of this practice have been offered by the exploitation of preparations containing hexamethylenamin as their active ingredient. By the use of therapeutically suggestive names and circulars discussing the value of the preparations in gonorrhea large numbers of the laity have been led to believe that some of these are almost specifics for this disease—which, of course, they are not. The wrong that may be done to innocent parties from a layman believing that he is effectively treating such a disease as gonorrhea need not be dwelt on. But is the physician who brings this class of preparations to the notice of the laity by prescribing hexamethylenamin under some of *these objectionable* forms any less culpable than the one who makes morphin habitués or inebriates by careless prescribing? Yet physicians are doing this daily and such preparations are advertised in most of the medical journals.

The current methods of naming new drugs not only lead to great confusion but serve as a cloak for all kinds of frauds on the physician and the public. The really new remedies, and especially the really new classes of remedies, are not so numerous but that physicians could keep fairly well informed concerning them if the essential facts were presented in a simple straightforward manner. Purely commercial interests are apparently absolutely dominant at present, so far as the nomenclature of new products is concerned, and there is little prospect of improvement until the medical profession—

or rather the individual physician—insists on being told, without any chicanery, exactly what he is asked to prescribe.

But it is not only in the matter of names that many of the even more prominent manufacturers do not deal entirely frankly with the physician and the public. A review of the literature bearing on proprietary medicines will readily show that the physician need not expect more detailed information from manufacturers than he actually insists on or demands.

That physicians have been content and have received but half truths concerning important matters is too well known to need much discussion. One illustration, of recent date, may, however, be given. Reference has already been made to a class of organic arsenic compounds which are attracting much attention. As they seem destined to attract still more interest in the future, and as many new compounds of the same class are being investigated, it was especially desirable that the first information given concerning them should be correct and complete. Yet the very first one, under the name atoxyl, was brought to the attention of the physician with an incorrect statement even as to its composition. Professor Puckner, Secretary of the Council on Pharmacy and Chemistry, seems to have been the first to discover the discrepancies between the manufacturer's statement and the truth. His results were soon confirmed by Ehrlich under the following circumstances: It had been recognized for some time that this compound had certain disadvantages and Ehrlich began a systematic and painstaking search for a derivative which would have the same therapeutic properties but which would be less toxic. He saw at once that the modification he desired to make would be impossible if the statements of the manufacturer concerning the chemistry of the substance were correct. A lesser genius than Ehrlich would probably have abandoned the attempt; Ehrlich did not and soon found, as Puckner had found, that the manufacturer's statements were not correct and that it was, after all, possible to make the derivative desired. The result was the discovery of a new compound, arsacetin, which promises to be of much value.

Illustrations such as the above could be multiplied almost indefinitely, but these are surely sufficient to show that sources of information other than that supplied by interested parties are urgently needed. Were it possible for the physician to learn promptly a new drug under a single name, and be given all that is known concerning its composition and action, he would be in a much better position to begin his clinical studies; he would have more time for careful observation and for the study of the dietetic and other forms of nonmedicinal treatment. The physician's task is sufficiently complex and difficult without the handicap of confusing names and imperfect or misleading statements concerning the drugs he uses.

While the entire method of the introduction of new drugs is far from satisfactory from the standpoint of either the physician or of the public, it is but the logical outcome of the failure of the medical schools and of medical institutions to support adequate departments of pharmacology. If every important medical school had a really efficient department of pharmacology, in which properly trained men received sufficient compensation so as not to be compelled to engage in the practice of medicine or in commercial work, but who could devote all their time to teaching and investigation, giving their results freely to the world as do the chemists and physicists in the best universities, the whole aspect of the proprietary medicine question would soon change. How fruitful university laboratories of pharmacology have been in the past is sufficiently attested by the introduction into therapeutics of chloral, of antipyrin and most of the other modern antipyretics, of cocain, of paraldehyd, sulphonal and most of the other newer hypnotics, of strophanthus, eserin, the nitrites, theobromin, the suprarenal glands, and many others.

The endowment of such pharmacologic laboratories would be a good investment for both the medical profession and the public. So long, however, as they do not exist, or are so inadequately supported, the physician must pay the toll of lost prestige and the public that of high prices for new drugs, and neither has much cause to complain. And the manufacturers who make real contributions—and there are many such—have the right to expect the physician to recognize their just claims. But neither the physician nor the public is under obligations to pay toll to the parasites who simply appropriate the discoveries of other manufacturers or of physicians themselves. There are also limits to the benefits which would be reaped by even the worthy manufacturer; for many of the discoveries of the latter are such as would inevitably soon have been made by others and no one should be allowed to secure a permanent monopoly on them.

What steps can the medical profession or, rather, what steps can the individual physician take to secure the information necessary for him to derive the best results from drugs with the least expenditure of time and energy? The answer is as old as the history of medicine itself: by cooperation to establish and maintain standards which in the last analysis shall represent the contributions the individuals make for the common good. Little patience is shown nowadays with those who hold up the past as a model for the present. Yet in the making and maintaining of standards for drugs the medical profession in this country does seem to have departed from one of its most honored traditions, but there are many indications that this departure is only temporary. Until comparatively recently the books of standards—or pharmacopeias—were the work of physicians; they represented the contributions of individual members. Through a variety of influences, some of which are difficult to determine but in which the low standards of medical education played a rôle, physicians took less part in the revision of the Pharmacopeia. With the diminished interest in revision came diminished adherence to standards; and then the Pharmacopeia came to represent less and less the needs of the medical profession. One of the earlier indications that this was the case was the preparation of the first edition of the National Formulary in 1888, by which the pharmacists endeavored to supply a book of standards for non-secret, in many cases elegant, preparations. But the physicians were abandoning more and more standards prepared by disinterested parties and accepting those of manufacturers, and, moreover, the works now prepared almost entirely by pharmacists failed to meet not only the fancied but often the real needs of the physician.

It is not necessary to trace the further history of this subject in detail or to relate the sporadic efforts made to counteract some of the evils resulting from proprietary medicines. A new era began about ten years ago when Dr. George H. Simmons was called to the editorship of THE JOURNAL of the American Medical Association. Dr. Simmons proved himself to be one of those—unfortunately few—editors who do not feel that their duties end with keeping the reading pages clean. As the result of a review of the advertising pages thousands of dollars worth of advertising was discontinued and a firm stand taken concerning the attitude of THE JOURNAL toward proprietary medicines. This required rare courage, when there was no Food and Drugs Act, when strongly intrenched and insolent proprietary interests were threatening law suits at the least suggestion that the truth be told about their products, when the timorous feared that THE JOURNAL would be wrecked, and when the medical press was hostile; but he won the battle and to-day edits the cleanest medical weekly of the world. Medical journalism does not record a more courageous course.

In the attempt to purge the advertising pages of THE JOURNAL of fraudulent products some competent and reliable authority was needed that could be referred to to decide what was right and what was wrong, especially as regards composition of the medicinal products offered to physicians. The final outcome was the formation of the Council on Pharmacy and Chemistry charged with the preparation of the book "New and Nonofficial Remedies." The purpose of this book has often been misrepresented. The authors are frequently accused of trying to dictate to the doctor or of conspiring against his freedom. The simple truth is that the American Medical Association, through the House of Delegates and Board of Trustees, has requested a number of men to serve as a committee, without remuneration of any kind, to prepare a small work on drugs which for some reason or other are not in the United States Pharmacopeia or the National Formulary. The one criterion for the admission of proprietary articles to this book is this: are they as represented; and the primary question is always, do they have the chemical composition claimed? In considering the question whether the drugs are as represented the Council is frequently confronted with a dozen preparations of the same class claiming to be "absolutely the best"; thus there are about a dozen of the "most powerful" but "least toxic" germicides, a dozen or more of "absolutely the most powerful" diastases; quite a number of the "safest" hypnotics and so on. Evidently some of the gentlemen making these claims are mistaken and the Council has asked "to be shown." Some firms have admitted that their statements were incorrect and have changed them to correspond to the facts; others have admitted that their claims were false but stated that they would try to make products corresponding to them in the future, but that in the meanwhile they could not afford to injure their standing with the physicians by telling the truth; still others have stated that it is none of the physicians' business whether the truth is told them or not. As a rule no further attention is paid to these latter classes of products; occasionally one of them is exposed as an example of the kinds and varieties of frauds that are being practiced, but the Council desires its work to be constructive and not destructive.

The Council has found that there is a large and increasing number of physicians who desire information such as the Council attempts to collect; this desire comes partly from a fuller realization that a physician should neglect no opportunity to be certain of the composition of the drugs he uses. As a concrete example of the deception that may be practiced unwittingly I may refer to a preparation claimed to be a solution of mercuric iodid in an oil suitable for hypodermic injection in syphilis. Dr. Seidell examined a sample of this preparation in the Hygienic Laboratory; not a trace of mercuric iodid could be found. A second sample, of a lot made in the presence of a medical practitioner who weighed the mercuric iodid himself and saw it added to the oil, was also found to contain no mercuric iodid. We do not know in what stage of the process the drug was lost, whether by volatilization, by filtration or how; we do know, however, that it was not in the preparation which reached the physicians—as indeed the clinical results of some of the latter showed. Would not a physician who had used such a preparation in a critical case of syphilis and lost his patient feel as guilty as if he had made any other kind of a fatal mistake in prescribing, and might he not be liable in a court of law? The Council desires to give physicians information which will prevent such possibilities as this. There is a rather large number of physicians who resent having lies told to them about drugs, just as the self-respecting man in any other walk of life resents a lie. There are also those who are weary of having chemists, pharmacists, and other laymen (in one case a piano salesman) endeavoring to teach them therapeutics. There are others, again, who are becoming impatient of having the same drug presented to them under a variety of meaningless or misleading names. There is also a large number who do not care especially whether the absence of mercuric iodid, pepsin, cod-liver oil, iodin, quinin, etc., in so-called preparations of these drugs is due to incompetency or knavery but who do want some evidence of their presence in addition to that of individuals financially interested. The Council is endeavoring to make "New and Nonofficial Remedies" a work of standards for such physicians as these and it invites, as it has from the beginning, the cooperation of all.

Soon after the Council began its work an endeavor was made to arouse the antagonism of manufacturers on the ground that their property rights were being attacked. Not many of these, however, have had the hardihood to ask physicians to use their preparations and at the same time to tell them that it was none of their affairs what these contain. On the contrary, many have found it good policy not only to state the composition but to state how this may be verified by other chemists, just as the Pharmacopeia gives tests of identity and purity for the various products contained in it. I know of no physicians or editors of medical journals who deny the necessity for work such as the Council is doing. It has, however, bitter enemies. One of the leaders of these stated that it was folly to attack the American Medical Association or the Council on Pharmacy and Chemistry directly; and that the only chance of checking the work of the latter was to attack the members personally. Dr. Simmons, as Chairman of the Council and as editor of THE JOURNAL which has led in the movement, has been the subject of most frequent and persistent attack. Most of the recent ones, some of which are anonymous, can be traced directly to those who are financially interested, in one way or another, in proprietary medicines. It is scarcely necessary to consider these; a glance at the advertising pages of the medical, or rather pseudomedical, journals containing some of them, or a moment's consideration of the editors' commercial affiliations, will suffice to disclose the animus.

The incompetency or insincerity of some of the manufacturer-editors, who, till recently at least, were most persistent in these attacks and who pose as working for the uplift of the profession, may be illustrated by a concrete example which came to my attention. Dr. Seidell and I examined some time ago in the Hygienic Laboratory a number of samples of a solution of nuclein exploited by a company whose fervent appeal for a "square deal" is known to many of the physicians of the country. Here are a few typical statements from a circular issued at that time by the firm: "For years we have been the chief promoters of nuclein therapy, endeavoring to place its principles before the profession in the right light—in a practical, usable form and as far as possible deprived of all uncertainty. Out of our experimental work we have developed the chemistry of nuclein to a point that produces a product second to none." They stated that their nuclein was "all right;" that it had the unqualified endorsement of "hundreds and thousands" of physicians well able to judge by results; that they believed it to be far the best product on the market, etc. The following is said as to its dosage: "It should be remembered that, except in acute toxemias, over-stimulation of the cells is not to be desired; therefore, in low states of vitality, small doses (gtts. 2-5), long continued, give best results. In all acute invasions of the system LARGE DOSES (gtts. x-xx, preferably hypodermically) are, however, necessary. These should be repeated at least twice daily. In emergencies, where the patient is overwhelmed with toxins, the exhibition should be made every few hours." Our examination of the solution thus described in such enthusiastic terms showed the presence of from 0.04 to 0.05 per cent. of solids (about the amount present and permitted in many potable waters). Assuming these solids to have consisted entirely of nuclein (a rather rash assumption perhaps) the usual dose of the solution recommended would have contained from 1/400 to 1/1300 of a grain of nuclein. If the dose were repeated about a dozen times a day the patient would in the course of a month have received nearly a grain of nuclein—an amount obtained several times over in any ordinary single meal. If the case were desperate—if, as the circular states, "the patient were overwhelmed with toxins"—and, following the directions, large doses (gtts. x-xx) were given hypodermically, it would have required about 100 hypodermic injections to introduce a grain of nuclein. Why not give the patient a bite of sweetbread? It would have contained as much nuclein and been more agreeable. The difference in price might be a factor; for, while sweetbreads are somewhat expensive, fifty times the price of pure gold was asked for the nuclein in this solution. The crushing reply to such suggestions would probably have been, quoting from the circular: "This nuclein is all right. It has the unqualified endorsement of our Drs. . . . as well as hundreds and thousands of others well able to judge by results." Seriously, has not such so-called clinical evidence about the value of that of physicians who a few years ago were "curing" malaria with powdered gypsum sold under the name "tasteless quinin" or of the laity who "cure" measles with sheep dung? And think of wasting valuable time in the case of serious illness experimenting with such stuff. The company exploiting this nuclein took the commendable step of practically withdrawing it from the market until they learn something about the subject; but what are the "hundreds and thousands" who obtained such good results with the old preparation doing in the meanwhile?[1]

Will the medical profession allow itself to be influenced by criticisms coming from such sources as the above? And nearly all the criticisms of Dr. Simmons and of the Council have come from exactly such sources and similar interests closely allied, commercially, with them.

Before leaving this subject a word may be said concerning the attitude of many medical journals toward secret proprietary medicines. Disappointment is frequently expressed that so many of these continue to accept the advertisements of preparations which have been shown clearly to be fraudulent. It is unquestionably humiliating to see that the standards of so many medical journals, in this respect, are decidedly lower than those of some other professional journals and of many of the popular magazines. Still, an improvement is very noticeable; a sharper distinction has been made between the reading and advertising pages and several have dropped some of the most objectionable advertisements altogether. The editors of many have become apologetic. Some say they would like to reform but will not be dictated to; like Falstaff, they will not tell the truth on compulsion. One editor remarked that some of the advertisements in his paper were so evidently frauds that nobody could be deceived! As regards those journals which are published simply as business enterprises and in which there is a real division between the provinces of editor and advertising manager, the profession may as well accept this fact: Dishonestly exploited drugs will be advertised so long as there are doctors to use them or so long as doctors subscribe for such journals. The fact may be deplored, but it will remain a fact. The case is different with the journals supported by medical organizations. An organization which can not support a journal which is clean from cover to cover should not try to publish one at all. At present the advertising pages of the *Military Surgeon,* the official organ of the Association of Military Surgeons, are a striking example of what should not be tolerated in a journal controlled by a body of medical men; it is to be hoped that the new management will make radical changes.

Instances could be multiplied almost indefinitely of how secret or semisecret proprietary medicines stand in the way of progress. Many physicians in their zeal to give their patients the benefit of the latest discoveries are prescribing preparations which contain practically no medicinal ingredients at all or only the old familiar drugs under a new name. The remedy is to turn to the practice of using only those drugs, the composition of which has been determined by physicians or by their representatives.

Of the standards at present available the United States Pharmacopeia is, of course, the best. By the enactment of pure drug laws by the United States and by the several states this has practically become the national standard. Where there is the proper cooperation between physicians, pharmacists and officials entrusted with the enforcement of pure drug laws the difference between the value of official and proprietary preparations is about as great as that between the legal currency and the promissory notes of Tom, Dick or Harry; those of Tom may be all right, but the probabilities are that those of Dick or Harry have not their face value. Hence one of the first duties of the physician is to adhere as closely as possible to the preparations of the Pharmacopeia. A little study or consultation with one of those truly professional pharmacists who are to be found in almost every community will convince many a physician that he is using drugs for which officially recognized ones may easily be substituted. If, however, after careful study, he fails to find in the Pharmacopeia or in the case of a pharmaceutical mixture, in the National Formulary, the drug he desires to use, I believe the next best source of information is New and Nonofficial Remedies. The latter contain, in the case of proprietary preparations, not only the statements of the manufacturers, but also the results of the investigations of disinterested parties made by the authority of the American Medical Association. It is a noteworthy fact that of the several hundred preparations admitted to this book not a single one has been shown to have a composition differing from that given, whereas the larger part of the proprietary preparations at present on the American market which have not been admitted to New and Nonofficial Remedies have been found to be of uncertain or variable composition or exploited in a questionable manner. Hence a physician should be very cautious in using a drug which is not contained in one of the above-named books. If, however, after careful investigations he is convinced that he has found a drug of value which has not been admitted to these works he is false to the traditions of his profession if he does not make the fact known to his colleagues. It would be safer, however, for him first to submit his findings to the secretary of the Council on Pharmacy and Chemistry, Professor Puckner, who probably has a more encyclopedic knowledge of new drugs than any other man in the world. Professor Puckner, as secretary of the Council, has from the first requested such suggestions as well as criticisms of the products contained in New and Nonofficial Remedies. If more such requests were sent than he could answer it would pay the profession to provide additional assistants for him. The office of The Journal of the American Medical Association should continue to be, as it is at present, a trustworthy source of information to physicians generally as well as to the members of the Association.

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[1] "Nuclein" has frequently been a source of confusion and misrepresentation in the "literature" of proprietary medicines. In strictly scientific literature the physician reads how Loewi administered thirty grams (450 grains) pure nucleic acid to a man without observing any ill effects. From this a physician would infer that ordinarily, at least, nuclein is a harmless substance. Another proprietary preparation with the innocently sounding name "Protonuclein" was found, however, to contain considerable thyroid. There was recently placed on the market another secret proprietary product, Iodonucleoids, purporting to be a compound of iodin and nuclein. To a physician who is at all familiar with the subject of the nucleins a compound of iodin and nuclein would appeal as something new and worthy of trial. On examination, however, this preparation was found not to contain a true nuclein at all, but seemed to be a product such as can easily be made by simply evaporating a solution of hydriodic acid with ordinary casein.

By far the larger number of drugs used by most physicians are those recognized by the above standards, but, on the other hand, there are not many physicians who do not use at least a few drugs of questionable character. It is the sum total of the latter which is largely responsible for the present unscientific and unsatisfactory state of drug therapeutics. Most proprietary remedies are sold at such a large profit that a comparatively few orders will keep one of them alive. If each individual physician would carefully consider the drugs he uses and then either abandon those which are not official or are not contained in New and Nonofficial Remedies, or, if convinced that they are of value, use his endeavors to get them admitted to these works (the door of the New and Nonofficial Remedies is always open for honestly exploited drugs) much would be done to solve the proprietary medicine problem. The ideal condition will be reached only when every drug which the physician needs has been admitted to the final legal standard—the United States Pharmacopeia—and the physician should consider it one of his duties—to his patients, to his colleagues and to the public as well as himself—to use his influence to perfect and maintain this great work. The opportunity to support the Pharmacopeia comes to the physician every day; the opportunity to make his influence felt in its revision comes to him but a few times in his life. One of these times is now approaching. The Convention which meets in Washington next spring will formulate the plan of the Pharmacopeia which will be the great guide for the next decade. It is the duty of every physician to endeavor to have his state medical society and his alma mater represented at this convention by three (the number each such organization is entitled to) earnest, broad-minded men who will insist that, among the multitudinous interests seeking recognition, those of the physician and his patient will not be overlooked.

Finally, I desire to put in a plea for the support by the physician of research work in pharmacology. For thousands of years the great contributions to materia medica came from the medical profession; in the last few years only have they been coming more and more from without. The profession has lost prestige and in addition has become confronted with the proprietary-medicine problem. The solution is for the contributions to, as well as the control of, new drugs to come from the pharmacologic laboratories of the medical schools, of the Government and of medical associations. Nothing is so potent, not only for positive progress, but for dispelling darkness, as a great discovery.

CERTAIN IDEALS OF MEDICAL EDUCATION

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It is the function of the teacher to perpetuate, by transmission to the on-coming generation, the knowledge and traditions on which civilization is based. We who have for our share of this indispensable work the transmission of medical knowledge and of medical traditions find the difficulties of getting our freight into the depots of youthful minds always numerous and often great. We, therefore, are constantly busy with efforts to improve our transactions by selecting the most valuable knowledge to transfer, by seeking devices to quicken the business, and by trying to save the labor-waste of the students. We have, besides, to add daily to our stock all the latest novelties. Despite all these pressing demands, we must keep the whole army of data in perfect order, under the command of general ideas and of natural laws. It is inevitable that the pressure on our energies should absorb most of their power so that we are habitually too busy to pause; and yet it is , I am sure, helpful to pause occasionally to consider, not the details, not the ways and means of our business, but its underlying principles.

May I regard this hour as such a pause, which we dedicate to an examination of the purposes of medical education and their best fulfillment? The function of a good medical school is to produce competent practitioners of medicine. I can not venture to call this an original idea of my own. Though it is a platitude to which all assent, it has its place here, in order to permit us to add that it is not the sole function of a good medical school, for only that medical school attains a high place, or even real importance, which adds on a large scale to medical knowledge and trains a steady succession of young men to become medical teachers. Only by the active pursuit of these high aims can the influence of a medical school inspire sound professional ideals in

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[*] Commencement Address delivered before the Medical School of Washington University, St. Louis, May 27, 1909.

the minds of its students, practitioners to be. It appears, then, more accurate to put our platitude thus: The *chief* function of a medical school is to produce practitioners.

THE ESSENTIAL QUALITIES OF A PHYSICIAN

If we are to proceed intelligently, we must begin, it seems to me, with an inquiry as to what are the qualities which a physician should have, and the development or acquisition of which by students a medical school ought to render possible.

There is one quality the possession of which is the supreme need of the physician, without which he is as unfit and useless as a tone-deaf musician, or a color-blind painter. It is a quality with which every normal man is naturally endowed, just as every normal man is endowed with hearing and sight. But just as it is true that not every man can become a musician or an artist, so is it also true that for most men it is impossible to become good physicians, for the reason that they lack the one fundamental indispensable quality, that rare gift—a faculty of exact observation.

Accurate observation is by far the most difficult art which mankind has ever essayed. A nation may count on furnishing abundance of military talent—I begin with the lowest profession—plenty of politicians and statesmen, enough of competent lawyers; it may even hope to have gifted artists and authors; but it can scarcely expect to produce a single master of the art of observation in a century. It is important to realize this fact. Although the fact itself is beyond discussion, its significance is little heeded. The reasons for it are not far to seek. In most occupations a partial success is valuable; if a good result is gained it has a practical value. If a general wins a campaign, he is victorious; yet there probably was never a war which might not have been ended with less than the actual loss to the victors. A statesman whose constructive work benefits his country still does not produce perfect laws. Bismarck always dreaded the unforeseen consequences of his statesmanship. Lawyers have proved themselves useful, though litigation due to their imperfect work is incessant. A beautiful poem or picture may be a precious joy without reaching to the standard of absolute perfection. Scientific observation, on the contrary, aims for the absolute, and so far as it fails to establish the absolute truth it must be renewed, tried again and again, until every blemish is removed from it. Observation is accurate and good only when it attains absolute perfection. Religion sets before us an ideal of absolute moral perfection. All other ideals of men admit of limitations, allow of boundaries, save in our waking dreams and saving else only science, which claims from us the ideal of perfect observation, which alone can reveal the absolute truth.

In most professions merit is measured by a finite scale, but the scientific observer must strive toward the Absolute, which to our human powers seems infinitely remote. Because the ideal is so lofty very few come near it. In a century Germany produces one Helmholz, France one Pasteur, England one Darwin—an American peer of these three is yet to become known.

Observation is much more than seeing, hearing and feeling. Our sensory perceptions are but the beginning, and the simplest link in the chain of processes. Yet in my experience no young man, without prolonged and severe discipline, can be trusted to forge aright even this first link on the anvil of opportunity. To appreciate the real difficulties, we must pass behind the scenes and study the mental apparatus.

The faults of the observer are to be explained not so much by the working of his eye as by the failure to work of his brain. The organs of sense are, as the physiologists have taught us, imperfect, severely limited in their scope and ever ready to furnish us with defective sensations and illusions, but they work with astonishing accuracy as compared with the mind. In my long career as a teacher of medical science, I have had only two students whose eyes were not equal to good microscopic vision, but I have never had even a single student whose mind could perceive the retinal images obtained from microscopic preparations.

Successful scientific observation depends on three psychic factors: intelligence, concentrated attention, and judgment. Intelligence is necessary to guide the observer, who must before he begins have a clear understanding of the conditions by which the character of his observations is determined or modified. Above all, there must be an intelligent appreciation of what to look for, and an intelligent technical acquaintance with the methods to be employed. Only to a very limited extent, indeed, can the direct observation of natural conditions suffice. Herein, to my thinking, lies perhaps the most characteristic distinction between ordinary and scientific observation: the latter relies constantly on factors artificially introduced to expose objects too hidden or to record phenomena too remote or swift for observation. Indeed, science is based on the invention of methods of research, and the introduction of each new method is followed by an advance of knowledge. In order to realize this, we have merely to think what we owe to the methods of injection, of staining sections and bacteria, of making graphic records of the pulse and muscular contractions, of filtration and dialysis, of electric measurements, and so on through a list of immense extent. Without these numerous artificial methods our sciences would have remained rudimentary. Intelligence is, therefore, especially necessary to master methods, and no training in any natural science is more than a farce which does not give the student, first of all, a practical acquaintance with the methods used and of their advantages and their errors.

Concentrated attention we, of course, all know is indispensable, but, like other virtues, it is easier to commend than to practice. It is comfortable, after receiving a general impression, to pass on to something different with a fresh interest; but power is only for those who can sustain the closest attention for a long time, because otherwise details are overlooked, and the anticipated fact remains unnoticed. The ability to catch hold of the wholly unforeseen and significant phenomenon is the distinctive gift of a great mind. We are mentally blind to what we do not anticipate or at least know as a possible occurrence. The history of science is rich in illustrations to the point. One such curious illustration I may mention. For many years the red blood corpuscles of man and other mammals have been described as like biconcave discs in shape, but this form is to be observed really only as an artefact, and, as we now know, the corpuscles in life are cup-shaped, being hollow on one side and convex on the other. The truth has been known to us, however, only a very few years, because every one who examined the blood had a preconception of the corpuscular form, and was mentally blind to the evidence as to the real shape, of which any one can now easily satisfy himself, because his attention will be rightly directed. Innumerable instances could be compiled of scientific discoveries long missed because of failure to attend to some unexpectedly significant fact. It is by trained attention that we achieve accuracy and thoroughness; hence the first aim of the instruction in every scientific laboratory should be to impart to the student a habit of relentless attention and a high standard of exhaustive precision of observation. The quantity of information acquired is of minor importance.

Judgment is the highest quality. By attention and intelligence we may gather data, but judgment coins them into conclusions for the intellectual commerce of the world. Judgment, as here conceived, is much more than the judicial faculty, which is merely skill in balancing the pros and cons—a useful legal faculty, for the law courts deal with evidence mostly from average persons who are often biased by their interests, and in any case are ordinarily incapable of accurate observation. The law courts also follow a method, that of having opposing counsel on the two sides, which is absurd in science, though—be it confessed with sadness—this deplorable method is often mimicked in scientific debates. The scientific method is based on our belief that invariably the evidence must be wholly and exclusively on one side. If there is an apparent conflict, the duty of judgment is to find out, first, what part of the evidence is erroneous; second, what logical errors have occurred in the inductions drawn from the observations. As to the observed data, judgment must decide, first, whether they are to any extent erroneous; second, to what extent they are incomplete. For such a decision in any department of research to-day a thorough expert knowledge of the special subject is necessary, which must include not only intimate acquaintance with all previous work—a requirement too often shirked—but also intimacy with all the possible sources of error. Scientific judgment is a mental faculty which becomes efficient only after long experience and development. It is by illustrating in his own person the successful activity of this faculty that the professor of natural science exerts his most beneficent influence on his pupils.

Judgment renders its loftiest service when it deals with the logical inductions from the data. The first step logically—though often not psychologically—is the determination of the differences and of the resemblances among the data. Resemblances are far more difficult to recognize than dissimilarities and they are often as nonexistent to untrained minds. Then follow the proper reasoning processes which, if successful, carry us beyond the observations to the generalization, which makes part of the growth of science.

Now the nearer a practitioner of medicine comes to possessing the gift of observation, as just described, the better practitioner he will be; and, inasmuch as it is only in science that such ideals of observation are maintained, it is evident that a scientific training is indispensable to produce physicians psychologically fit. One still sometimes hears the distinction drawn between the "practical" and the "scientific" doctor; so far as I know, the most important difference between a "practical" doctor and the truly scientific is that the patients of the former are the more likely to die. Yet, of course, practical experience is of the utmost professional importance. Medicine is one application—only one of many—of biologic knowledge to practical needs, and the practical technic of the application must be mastered. There are useful practitioners of medicine whose utility is founded on their practical experience, but I had rather entrust myself to the care of one who had in addition to a practical technical mastery a mind educated to observe with scientific accuracy and reason with scientific precision. Those who extol the practical man and decry the scientific are of the sort who would rank plumbers above engineers.

St. Louis has had two physicians to whom I wish specially to allude, because they possessed the noble spirit of research to a pre-eminent degree. Their memories are held in honor wherever biologic science has a foothold. Both owe their well-earned reputations to their ability as scientific observers; Beaumont and Engelmann were practitioners, but their investigations demonstrate that they realized in their own persons the ideal we have before us. Their work has added an enduring luster to the fame of St. Louis. May they have many worthy successors!

The second quality, which both the medical student and the graduated physician must possess is, at least in my opinion, intellectual endurance. The medical mind must work not only well, but strenuously and continuously. The period of study in America is now actually from six to eight years, since four years has become the standard of the medical schools, and admission to them demands one or two years' work in the preliminary sciences, to all which a year or two in the hospital ought to be added. During every one of these years the student must work at high pressure, mastering one branch of science after another, learning the general principles, the technical methods and the practical applications of each, and gradually fitting himself for the art of practice. Having accomplished so much, he can not for an instant relax his acquisition of further knowledge, not merely from his own direct experience of diseased persons, but also by keeping abreast all his life with the progress of medicine. He must keep up not only with the improvements in medical treatment, but also with the advance of scientific knowledge. To do this perfectly has already become impossible, and the difficulty is constantly increasing. The older practitioner as he becomes busier, and his years render new modes of thought more difficult for him, must lag more and more behind the times and feel himself less and less well equipped than the on-coming young man. He is saved from discard only by his ripened judgment and his wisdom in dealing with patients. It is evident that intellectual endurance, a sustained mental power, an ever-active gift of apprehension, a ceaseless passion for knowing—call it what you will—is demanded of the members of the medical profession as of no other. Medicine is a profession which only men of exceptional ability should enter. Men of moderate gifts should seek other occupations. In the future, as medical knowledge becomes still more vast, high ability will be indispensable for those who try to master and apply it. No other profession is likely to equal it in difficulty, for the lawyers, engineers, architects, chemists and others have far less complicated problems than the physician; and their fields of knowledge are smaller. Moreover, specialization in the learned professions mentioned is far more feasible than in medicine, for every part of our bodies is related so intimately to every other part that no specialist can deal with his subject as an isolated field of practice. Not merely as in all scientific professions must a man keep up with the general progress of knowledge, but, since every organ is related physiologically and pathologically to every other, the medical specialist can not seclude himself in his chosen subject, but must preserve his active intercourse with all medical domains. The practitioner, no matter how much absorbed in work, must remain all his life a quick, diligent, alert, receptive learner. Never may he let himself feel a senescent apathy to new ideas. The ideal physician possesses a life-long intellectual endurance.

The psychologic traits desirable in members of the medical profession are many and complex. Even were I competent to review and discuss them all, such a disquisition would not suit this occasion, and it will suffice to keep our attention concentrated on a few fundamentals. Let us, therefore, content ourselves with adding loyalty as the third indispensable quality, for loyalty best expresses that quality of single-minded devotion, that trinity of faithfulness to occupation, to purpose and to person which makes us gratefully reverence the great physician. Loyalty is a natural gift, but, like all natural endowments of character, it may be cultivated, trained and strengthened. Our entering students rapidly classify themselves according to their loyalty to their immediate work. The best men already feel the gravity of their decision to become physicians; they appreciate the seriousness of their studies, and work faithfully each day with a prophetic instinct that each day's knowledge builds up the base for their future decisions. They are already filled with a sense of responsibility; and to nourish that sense, to sustain the loyalty of the learners should be the constant goal of the medical teachers' ambition. The student should be made to feel from the very start that his purpose in life must be to serve, and that devotion to his studies is his initiation into the life of perfect devotion to his patients.

REQUIREMENTS FOR A GOOD MEDICAL STUDENT

The man who purposes to study medicine should have in high degree three gifts, not one of which is common among mankind, yet all of which he must have. The three gifts are: the power of reliable observation, intellectual endurance, loyalty.

If the estimate we have made of the needed capacities of a physician be correct, it follows that a good medical school can exist only with good students. Coins of full value can not be made of impure metal. We must, therefore, start with the consideration of the means to select students to the exclusion not merely of the bad ones, but also of the mediocre. We must not attempt to mint doctors from merit basely alloyed. Examinations should have their main use, not as a means of admission, but as a means of exclusion, and the more men of low and middle rank that are excluded the better. One poor student damages a whole class. We should look forward to the exclusion of all men who fail to get high marks in the preliminary tests, so that there may be a reasonable probability that all who get in are capable of hard sustained mental work and of loyalty to their studies. The examinations ought, however, to accomplish more than this: they should afford evidence that the candidate has a natural power of observation, and that the power has already received some scientific discipline, and, finally, they ought to prove that the candidate has the preliminary knowledge of chemistry, physics and general biology without which the pursuit of the medical sciences is impossible. It is a welcome sign of progress that these entrance requirements are being rapidly adopted by the medical schools of the country, and there is, I am glad to perceive, a steady advance toward uniformity. In my opinion, such a preliminary training, with the appropriate sifting of the unfit, can be accomplished by two or three years of college work—and it is not and can not be accomplished by requiring an A.B. degree (or its equivalent) unless that degree represents adequate courses in chemistry, physics, biology, French and German. Under the prevalent elective system, a man may become a bachelor of arts and yet be not only undisciplined, but also very ignorant of natural science. I have had to do with many such men, and can only say that they are so inferior at the start that only the most brilliant of them can overcome the heavy handicap. Indeed, I can not affirm that even the brilliant men are able wholly to repair the evil, for in the rush of medical study they have no time to make up their deficiencies in the preliminary sciences. They enter as cripples and as cripples still they are likely to graduate from the medical school.

Although observation is the foundation of knowledge, and no human knowledge is built on any other foundation, men of intellectual power are by no means always interested in observation. There are mathematicians who can scarcely be said to feel interest in any observations. I often recall with amusement a distinguished mathematician whom I would not have trusted to make an original observation beyond a simple measurement, and yet who condescendingly explained to a company of biologists that their science must remain inaccurate until its results were mathematically formulated. The reply might have been made to him that no mathematical result can be accurately known until put in graphic form, so that it can be observed. The one half-truth is as good as the other. Our mathematical friend had still to learn that there is an accuracy in a complex visual image with which mathematics can not even distantly vie. We might construct a scale, with the anatomist at one end and the mathematician at the other; both alike depend on observation, but one seeks his accuracy chiefly in the renewal and extension of his personal observations—he loves first-hand knowledge; the other seeks his accuracy in the logical evolution of quantitative relations, and cares but little for the simple observations on which his mathematics depends. Between these two extremes we must range those minds which enjoy and seek both observational and logical satisfaction, and who are often experimenters. Among experimenters there is a wide range in the degree of relative interest—on the one hand, in what can be directly observed, and, on the other, in the logical work following the experiment. Only those in whom the love of observation is predominant are likely to succeed as physicians. For the pure experimenter there is plenty of room in medical science, but he can hardly find his right opportunity in medical practice.

The natural observer differs both from those who, like the humanitarians, are satisfied by second-hand knowledge, and from those who prefer experimental work, by his insatiable craving for seeing, and, to a less extent, for hearing and feeling. His inborn need is to have direct contact with the phenomena. Nothing short of the personal acquaintance with the phenomena satisfies him. Now those students who while in college elect the humanitarian studies, and neglect the natural sciences, are extremely unlikely to have the observing faculty. If they are required to study chemistry, physics and biology before they get to medical work they will be tried out, and those who have not the observer's gift, will learn their limitations in time to avoid becoming medical impedimenta.

THE STANDARDS FOR THE MEDICAL SCHOOL

Having obtained our students, we ask next: "What shall we teach them?" Really good answers to this question are given by the curricula of our better schools, which differ from one another only in detail, since in all the subjects are the same and the order in which they follow is essentially fixed.

Two comments on the present typical medical curriculum may be ventured: too much time is devoted to lectures, too little time to physiology. It is, if I be not mistaken, universally true that in American medical schools a large number of lectures are given which are mere repetitions of what is often better expounded in the text-book. It would, in my opinion, be wiser to devote many of the hours now used for lectures to practical work, restricting the lectures to general principles, the elucidation of complicated subjects, especially those which can be made clear by verbal explanation combined with drawings, models or experiments. Lectures at best can convey very little actual information, and their greatest usefulness is in exhibiting to the students the point of view, the intellectual attitude of the professor, who is not fit for his position unless his mental work is better than that of any of his students. The outlook in America is full of encouragement. Nowhere else in the world has laboratory instruction advanced as far and well as in this country. Germany must look to her laurels, for the whole university tradition there exalts the lecture. The system is strongly entrenched, for the professors depend on lecture fees. The future of scientific education depends on laboratories, and unless European universities imitate the American laboratory standards the stream of students from Europe to the United States will soon be greater than that of a generation ago from our country to Germany.

As regards physiology, have we not to deplore the fact that very few physicians think physiologically? It is only too true that if a practitioner is asked for a physiologic explanation, his answer is usually so lame that it can scarcely be said to go. Ask an oculist why the tears run on a cold day: or a clinician the cause of pain from indigestion, or how opium works, or what is the physiologic basis of shock; ask a gynecologist why birth occurs; ask a general practitioner the cause of senescence; or ask a surgeon how the after-effects of ether are caused—and the answer is likely to be by no means in physiologic terms, by no means an analysis of functions, but rather an empirical statement; and a physiologist listening might well feel himself transported to the middle ages. The body is a functioning machine, and when it does not work properly it ought not to be tinkered by empiricists working by rules, but examined and repaired by physicians, whose chief claim to confidence is that they are expert physiologists, whose knowledge of the bodily functions guides their practice. I deem the opinion sound which regards physiology as the central discipline of medicine, and maintains that a generous development of clinical physiology is the improvement needed above all others in our medical curriculum. We are all agreed as to the importance of anatomy in medical education—it can hardly be exaggerated—nevertheless, we may feel tempted to say that physiology is even more important.

In regard, however, to material resources, our schools differ widely; and those which suffer from deficient laboratories must either make up their deficiencies or go under, drowned in the flood of the progress of the others. We have in America to-day a number of laboratories at various medical schools which are serving as present standards. All the best teaching in the medical sciences is laboratory teaching. Each one of the sciences must have a large building and expensively equipped. The building must afford a separate work place for every individual student, rooms for the staff, rooms for advanced students and research; a lecture hall, library, and other necessary conveniences. These are merely minimum requirements, and mean that the cost of the plant for a respectable medical school is not to be reckoned by thousands, but by millions of dollars. There is no choice. Those responsible for the financial management may be staggered by the demands of their medical faculty; they may be able to meet the demands only partially for the time being, but in a comparatively few years from now only those medical schools will be found surviving which have met these demands. With time, too, the demands are sure to become more insistent and more numerous. Never have the financial responsibilities been so great, but, I repeat, there is no choice. The laboratory education is our one sure foundation. It is indispensable that it be amply provided for; if that can not be, the failure ought to be acknowledged and the school closed.

It is in the laboratories—and only in them—that the power of observation can be disciplined and developed, and only in them that the students can acquire genuine knowledge. In speaking thus, we class the hospital with the laboratory. It is my belief, strongly held, that a *laboratory is an efficient influence only when it is a* place where original research goes on actively. While it is true that the informational purpose guides the daily labor, and that it is indispensable that the student make by observation personal acquaintance with as many phenomena as practicable, yet it remains also true that the student should find in the laboratory an ideal standard of work—and the only possible high ideal is that of original investigation. It is relatively easy, under the guidance of an experienced instructor, with materials carefully prepared beforehand, to confirm by actual observation the statements of the text-book.

No doubt one exclusively so trained can become a useful mediocrity among practitioners; no doubt, even, that gifted men so trained will forge ahead despite the training; yet certainly a better education is secured when the students acquire appreciation of productive scholarship, and feel themselves so near it that it is an actual and living interest to them. Old discoveries do not stir much. We read calmly that some fact, which we find stated in all the text-books as familiar to everybody, was discovered fifty or forty or two hundred years ago by a man whose name awakens no significant associations. Utterly different is the effect on the student's mind when he learns that his instructor has made a successful research and has new discoveries to report. It is inspiring to him to know the discoverer. He feels himself a witness of the work of creation, and unconsciously his belief in the possibility and value of original work becomes a living influential conviction; and he rises at once to a higher intellectual plane. He advances on his way toward becoming a man of culture —a title which to-day only those can claim who have learned to revere productive scholarship.

Let us never forget that in contemporary education the moribund ideal is slavery to books; the nascent ideal, mastery of facts!

The consideration of our needs forces on us the conclusion that medical schools not only ought to be, but must be centers of research in order to succeed. To this end each school should be closely allied with the postgraduate department of its university, and the various medical sciences should be on a par in academic standing with the other natural sciences. Scientific students not intending to become physicians should be encouraged to enter the medical laboratories, and the highest university degrees should be as open to students of anatomy, pathology, bacteriology, physiology, etc., as to students of zoology, chemistry, or physics. If this policy be adopted with zeal, the reaction on the medical school will be wholesome, the effect on the university at large, uplifting.

THE SELECTION OF THE FACULTY

We have passed in review important aspects of the problem of maintaining a good medical school, but the most important factor of all, on which the successful solution of the problem chiefly depends, we have not yet mentioned; it is the corps of professors. Is it reckless to assert that no school has ever secured a sufficient number of sufficiently good professors? Perhaps no school ever will. As President Remsen has said, keenly and justly, the supply of good professors is always short. One great professor may leaven a whole faculty, but the need is for a great professor at the head of the five principal divisions: anatomy, physiology, pathology, medicine and surgery, and for first-class men at the head of the principal specialties. The majority of American medical schools certainly are without such corps of leaders.

The prevalent constitution of the medical faculties is due to various causes. First may be mentioned the survival of professors from an early epoch with lower standards; professors of anatomy who are not professional anatomists; of pathology who are busy practitioners; of clinical medicine, without knowledge of modern pathology. This difficulty cures itself. A second cause is the custom of promoting local men, who are rewarded with professorships for their faithfulness rather than for their ability. Every such promotion prevents the appointment of an abler man from outside. A third cause, and the most potent of all, is the American system of appointment by the president and trustees of the university, which often amounts to appointment by the president alone.

The administration of our colleges and universities has become more or less autocratic. The university president has great power, which we are accustomed to see liberally employed, on the whole, to the immense advantage of the university cause. President Gilman's service to higher education has our fullest admiration, and there are other presidents still living who are great leaders and whom we delight to honor. We can not regret this phase of our development, though there are many now who hope and believe that it is only a phase, and who welcome the unmistakable signs of the transformation of the office, by which the university president of the future will be more a business administrator and less a minister of education. The president is likely to long remain a valuable—an almost indispensable—factor in our university life; but, in my opinion, is not likely to retain any such control over appointments as he at present exercises. This control depends on the custom of having appointments made by the board of trustees, which is typically composed of business and professional men who are qualified to advise about the management of funds, the conservation of resources, and the distribution of income. The trustees ought, however, to admit frankly to themselves that their chief usefulness is, first, to increase the resources of the university; second, to determine the broad questions of general policy so as to secure a symmetrical growth of the institution. It is inevitable that the large majority of them should be inexpert in education, inadequate in their notions of scholarship, and ignorant of the needs, methods, and possibilities of most—if not all—kinds of original research. Such a board at its best can not by any possibility be a very successful piece of machinery for the selection of professors, because the members can not form a valuable judgment of their own concerning the only indispensable qualification of a candidate for a professorship—his ability to do original research of a high order. They forget too readily and too often that it is a disgrace to a university to appoint a man as professor chiefly because he is a "good teacher"—such a man may be a good school teacher, but only investigators can give university instruction.

In securing a faculty, the president and trustees must be guided by advice, and they undoubtedly are so guided to a very large extent at the present time. But the advice is too often gathered more or less fortuitously, and not by any definite custom or fixed principle. For our future welfare it is important to plan for obtaining the best advice, or, in other words, to make sure of good nominations being systematically presented. Accordingly, I look forward to seeing in the near future the task of nominating candidates for professorships and other teaching positions assigned to the university faculties.

It goes without saying that a university teacher must be by character and manners fitted to join a society of scholars and to come into intimate contact with young men and women. We can not, however, make every respectable gentleman a professor; but we must be sure that he has a sound, powerful, creative intellect, of which the only satisfactory proof is original research of a high order. In comparison with the possession of this intellectual gift, all other endowments are subsidiary. Professors may vary much in their ability to lecture, their availability for administrative work, in their adaptation to social life, in their capacity for business, in the quality of their minds; but all good professors are necessarily alike in the possession of creative mental power.

The selection of candidates for professorships must, then, be made by persons who can form expert judgment on the original investigations of the possible candidates. In universities, qualified judges are found in the faculties—and usually only in the faculties. To the faculty, then, ought to be given the exclusive right of nomination, leaving to the trustees only the right of confirmation; partly as a check against possible occasional errors of judgment by the faculty, partly as a financial safeguard against expense not warranted by the actual resources. This implies a radical reform in our universities; but until the time comes when teaching appointments can be initiated only by faculty action there will continue to be an unnecessarily large proportion of more or less incompetent professors.

Let us summarize the opinions expressed: A good medical school produces good physicians. The medical profession is a very difficult one, and to meet its requirements exceptional men must receive a splendid special training. Therefore, a good medical school will accept only such students as have been selected by severe tests with high standards; it will maintain lofty ideals of knowledge, of observation, of judgment, of original thought and of loyalty. It will uphold these ideals not only by striving to furnish every important material facility in laboratory and hospital, but also by engaging able instructors. The good medical school may become great which adopts as its motto: Great professors make a great school. Let this be your device, for the greater in ideals and achievement your school becomes, the more you will help and inspire all the other medical schools in our country.

Harvard Medical School.

THE SCIENCE OF CLINICAL MEDICINE

WHAT IT OUGHT TO BE AND THE MEN TO UPHOLD IT *

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NEW YORK

The honor of the presidency of a society goes with the privilege of discussing some of the aims of that society. Such a privilege becomes a duty on the occasion of its first birthday. We have to show the specificity of our objects to justify the addition of a new medical society to the many already in existence. As your first president and as one of the instigators of the movement which led to the formation of this association permit me to discuss some of the problems to the solution of which this association wishes and hopes to contribute.

CLINICAL MEDICINE AS A SCIENCE

In the first place, I wish to discuss the problem of clinical medicine as a science. In years gone by, medicine was a unit and its leaders tried to master all its aspects. With the development of scientific methods and the growth of knowledge a process of differentiation took place. Heavy branches grew out of the stem of medicine, broke off and obtained an independent existence. Anatomy with all its dependencies broke away early, then followed physiology, pathologic anatomy, pharmacology and physiologic chemistry. Bacteriology tore off the branches of etiology and established itself as an independent growth. All these offsprings of medicine are now well established as pure sciences; they still closely affiliate with the mother-stem and are often designated as the sciences of medicine. That what is left of the old stem is clinical medicine. What is the character of this residuum? It is generally designated as the practice of medicine. I am not aware that any one has had the courage to call it a pure science. Those who do not like to call it an art say that it is an applied science. According to this view, the relation of clinical medicine to the sciences of medicine is that of technology to science in general. I am afraid that this conception of clinical medicine is widespread among those who are in the practice as well as among those who are in the sciences of medicine.

However this may be, I feel sure that such a view is logically erroneous and practically harmful. I wish to plead for an extension of the process of differentiation also to clinical medicine. I am of the opinion that clinical medicine as it exists now is made up of two constituents: one part has all the elements of a pure science and ought to be coordinate to the other pure sciences of medicine, and the other part is the real practice of medicine, an applied science which has many elements of an art. At present both parts are so closely interwoven that they present the appearance of a natural unit the splitting of which into two parts might appear to some as an impossible and undesirable process. I shall call to mind, however, that medicine made the same impression of an indivisible unit in the days when pathologic anatomy, physiology, etc., were inseparable constituents. To-day nobody doubts the necessity of an independent existence for the last-named constituents of former medicine. A considerable degree of separation of the science of clinical medicine from its practice is more desirable than even the separation of the coordinate sciences, because the requirements of sciences and practice are in a certain sense mutually antagonistic to one another and the simultaneous cultivation of both branches with equal attention is detrimental to the progress of either of them.

There is a fundamental difference between science and its correlated practice in any sphere of human activity. Science wishes to attain truthful knowledge of the subject it investigates. It attains this end in the safest way when it is least side-tracked by any extraneous motives. The motive of utility obscures its vision, and haste retards its progress. Practice, on the other hand, avails itself of acquired knowledge for the purpose of attaining a certain useful end. The more reliable that knowledge is which it has to employ, the more safely will it attain that end. But the use of any part of that knowledge which is indifferent to the attainment of the useful end hampers the practical progress. In other words, practice gains its ends best the purer the quality and the smaller the quantity of the science which it has to use. Permit me to say that my advocacy of the separation of a clinical science from its practice is not actuated by any disregard for the practice of medicine. On the contrary, I entertain now and have always entertained a strong conviction that the efficiency of practice should be the supreme object in medicine. At the same time I feel sure that the efficiency of that practice will be best attained when the search for the knowledge which the practice has to use should be carried on in the same manner and by the same methods as are employed in the search for knowledge in other branches of intellectual activity. In other words, clinical research should be raised to a department of a clinical science and be theoretically and practically separated to a considerable degree from the mere practical interests, that is, separated so far as the various and variable conditions permit. It will be the practice not less than the science of medicine which will benefit by such a separation.

Now let us see what the domain of clinical medicine is and whether it contains problems which can be treated by the methods employed in pure science. The sciences of normal anatomy and physiology teach us the structures and functions of the normal body; pathologic anatomy tells us of the anatomic changes found in a body dead from one disease or another. To clinical medicine is left the study of the phenomena and their sequence as they occur in a living body during the entire course of a disease. It has to interpret these phenomena by known physiologic laws, to identify them with similar phenomena experimentally produced in animals and it has to correlate the phenomena observed in the course of a certain disease during life with the anatomic changes found at the postmortem examinations in case the disease has a fatal termination. It is also one

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* Presidential address at the first meeting of the Association for the Advancement of Clinical Research, May 10, 1909, Washington, D. C.

of the tasks of clinical medicine to study the influence on the onset and course of phenomena of diseases which certain means and remedies may exert whose physiologic actions are well established. In other words, the domain of clinical research comprises the study of the natural history of diseases, their physiology and their pharmacology. Can there be any doubt that these studies constitute legitimate objects of a pure science? Objections may be raised, and will be raised in certain quarters, against the admission of the clinical science to the sacred inner circle of pure sciences on account of the impossibility in clinical medicine to verify the conclusions by the experimental methods. Assuming that this is an unassailable fact, what of it? Are the problems of biology, a science which enjoys an unassailable position in the councils of pure sciences, all or many of them provable by experiment? Or are the sciences of paleontology or geology amenable to an experimental proof? Yet nobody questions the scientific right of these branches of human knowledge. Furthermore, admitting that clinical research must necessarily remain less precise and its results less convincing than that, for instance, of physiology. But, then, physiology itself is again a great deal less precise than physics and chemistry and is certainly less irrefutable than anatomy. Does this throw a doubt on the claim of physiology to be a pure science?

As to the impossibility of verifying certain conclusions regarding human diseases by human experimentation, there is still this much to say. Each disease is an experiment which Nature makes on the organism. The very large number and the great variations of these experiments of Nature offer favorable opportunities for testing the theories made regarding the nature of these spontaneous experiments. Furthermore, clinical research should, indeed, be coupled with animal experimentation; any new point of view gained by observation in clinical medicine which can not be verified on human beings should be tested by experiments on animals. By such a procedure not only clinical medicine, but also physiology may learn a good deal, for which the following facts from the recent history of medicine are classical illustrations. The recognition of myxedema as a special type of disease led to the understanding of the function of the thyroid glands, and the observation of the coincidence of pathologic processes of the pancreas with diabetes led to the discovery by clinical investigators of the glycolytic function of the pancreas. Finally, it should be borne in mind that there are lines of experimentation which may be carried out even on the sick human being without any detriment to him and which can be conducted with profit only by trained scientific observers, for instance some studies in pharmacology or in metabolism.

Among the tasks of clinical medicine there is one which is on the borderland between the science and practice of medicine, being perhaps of greater importance to the latter than to the former. It is the search for simple or complicated means by which established units of diseases may be recognized safely and perhaps also easily. In one word, it is diagnosis. Since this activity is not carried on with a purpose of adding knowledge, it would appear that it belongs rather to the department of the practice of medicine. Such facts can be established only by means of careful critical observations and it will be more to the purpose when at least the development of the principles of diagnosis should remain in the hands trained in careful methods of research.

After showing that there is a definite field for a science of clinical medicine the next question is who should be the men to carry on the research in this field, what should be their qualifications? In the first place, they must have a training fitting them to carry out investigations in conformity with the requirements existing in all pure sciences. They must not only be informed and trained in the other sciences of medicine, but must have carried on various investigations in one or more of these pure sciences, so as to become familiar with careful scientific methods and imbued with a scientific spirit. They will thus learn best how to shape a problem so as to make it amenable to a solution; how to marshall the consecutive steps of an investigation so as to bring out the reply to the question in hand. They will learn to avoid bias in the search, to apply criticism to the findings; they will learn not to trust only few facts, not to rejoice prematurely over findings and not to be disheartened by failures. They will thus acquire the habits and the tastes of the investigator, the scientist, which may then stick to them for life.

However, after all these preparations they must select clinical research as the main field of their scientific activity. Clinical science will not thrive through chance investigations by friendly neighbors from the adjoining practical and scientific domains. Such volunteer service which for the present is keeping up the cultivation of the unacclaimed region is most certainly very welcome. But the acclamation, cultivation and maintenance of a field of pure science of clinical medicine can not be accomplished by chance services from volunteers; for such a purpose we need the service of a standing army of regulars. The investigator in clinical science must devote the best part of his time and intellectual energies to the cultivation and elevation of this field just as the the physiologist does in his domain—or at least as he ought to do. For the sake of elucidation let us compare the relations of a science of clinical medicine to its practice with the relations of science to technology in any part of physics or chemistry. Let us take electricity as an instance. In the electrical industry there is a large corps of electrical engineers who are bright, inventive and on the alert to make practical use of any newly discovered principle in general. Some practical engineers manage to make valuable contributions to the theoretical knowledge of their branch. Nevertheless the science of electricity is in the hands of pure scientists who are setting the pace of progress in the correlated practical branch. It is the discovery in pure science which makes great inventions possible. It was, for instance, the purely scientific demonstration by Hertz of the existence of electric waves that gave the impetus to and made the invention of wireless telegraphy possible. The following is a quotation from the presidential address of Professor Nichols before the Association for Advancement of Science[1]: "Communities having the most thorough fundamental knowledge of pure science will show the greatest output of really practical inventions." This is surely true also for medicine. And let me say to you that the Hertz's, the Roentgens, the Bunsens, the Emil Fischers, and a host of others, who are the real creators of knowledge and invention, are satisfied to live on comparatively small salaries, while it is within their easy reach to make twenty times the amount of their salaries as consultants, if they would be willing to give up a part of their time which they devote to investigations in pure science. Now, the leaders in practical engineering in electricity surely compare favorably with the leaders in the practice of medicine with regard to the completeness of their knowledge in the respective spheres. While thus the search for knowledge in electricity is carried on by men devoting themselves to pure science, the search for knowledge in clinical medicine is left in the hands of men who devote most of their time and energies to their practice and to the golden fruit it bears. Under such circumstances, how shall we expect to find the progress in science and practice of medicine keeping abreast with the striking progress to be met with in other branches of science and practice?

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[1] Science, Jan. 1, 1909, p. 5.

A few years ago I tried to fix the responsibility for the shortcoming of internal medicine in physiology, because this science is keeping aloof from medicine and its problems.[2] Anatomy, which gave its undivided attention to the human structures, prepared an excellent basis for a successful surgery, the problems of which are essentially mechanical in character. The problems of clinical medicine are essentially of a functional character, and the enlightenment which it requires must come from physiology. This science, however, developed a tendency to keep at a distance from medicine on account of the inexactness of the latter. There is an improvement to be noted in this regard; there is a growing tendency in physiology nowadays to pay greater attention to medical problems. However, even if physiology and other related medical sciences would devote all their time and energy to the study of purely medical problems, it would not bring about a radical solution of our perplexing problem. Neither will this be accomplished by the creation of chairs for experimental medicine. The regeneration or rather creation of a science of clinical medicine must come from the innermost of medicine itself. It is true, as stated before, that the men who are to tackle these problems must have a thorough training in the sciences allied to medicine, but the center of their activities must be within clinical medicine itself. They must have a bringing up within medicine, their minds must have been filled up with thinking, worrying, brooding over practical and theoretical problems of clinical medicine.

Let me recapitulate. There is a necessity for a differentiation of clinical medicine into a science and a practice. The clinical science has well-defined objects and is a most important department. It must be managed by a set of men specially trained for and almost exclusively devoted to that task. Without the development of such a department of clinical science the efficiency of the practice of internal medicine will lag behind, no matter how progressive the allied sciences of medicine are and how great their efforts to be useful to medicine may be.

THE CONDITIONS AS THEY ACTUALLY EXIST

In conjunction with the foregoing considerations let me glance at the conditions of clinical medicine as they actually exist here and abroad. I may state that neither abroad nor here do we find a separate class of investigators confining their activity solely to the domain of the science of clinical medicine. Everywhere science and practice of clinical medicine go hand in hand. We may, however, admit at the outset that there is an enormous difference in the status of medical research between abroad and here. Let us take the development and the present status of clinical medicine of the German-speaking countries as an illustration of the conditions abroad. We shall notice that there the mother stem of medicine managed to retain a scientific aspect despite all processes of differentiation.

When for the first time pathologic anatomy broke away completely from medicine and was taught by Rokitansky at the University of Vienna as an independent branch of medical science, we find that at the same time and at the same place the celebrated Skoda was teaching the remaining trunk of clinical medicine as a natural science, constructing the methods of auscultation and percussion on a sound basis and establishing a firm connection between the *intravitam* diagnosis and the postmortem findings. The purely anatomic tendencies of that celebrated school of medicine which unfortunately gave birth to nihilism in medicine, was soon curbed by the appearance of Virchow on the medical scene in Berlin. While also working for the establishment of pathologic anatomy, gross and histologic, as an independent natural science, he manifested throughout his long life a deep interest in the development of clinical medicine on sound lines. At the very beginning of his brilliant career we find him stating (in the prospectus to the first volume of his *Archiv*) that practice of medicine should be an applied science and the ideal of the science should be a complete pathologic physiology. The great clinical contemporaries of Virchow strove for a similar ideal. Frerichs introduced chemistry and Ludwig Traube the methods of experimental physiology into the domain of clinical medicine. I shall not dwell here further on historical details. I shall only say that clinical medicine in Germany remained true to this ideal throughout all these years of marvelous growth of medicine. The exponents of clinical medicine in Germany are the flag bearers of pathologic physiology. The contemporary clinicians master the immense knowledge and manual skill which contemporary clinical medicine demands of its disciples, and nearly all of them are themselves diligently adding new facts to the store of medical science. I do not need to tell you the particulars. Some of you know from personal experience such master clinicians like Müller, Krehl, Kraus, Minkowsky, and a good many others like them. However, the standard of medicine is kept high not only by the heads of university clinics; the various members of their staffs, heads of hospitals and their staffs and a host of volunteer workers are continually digging for new fruit in the soil of clinical medicine. The medical literature is full of original, first-rate work in the science of clinical as well as of experimental medicine contributed by men whose main abode is clinical medicine.

Now there is in Germany no special chair for the science of clinical or even experimental medicine. All these contributors to medical science are in a sense simply medical practitioners. What is the secret of their scientific success? It is simply this: to these men science is the first and practice the second object of their life. To most of the leaders of medicine in Germany the tasks of gaining and diffusing knowledge receives their first attention and the consultation practice comes in last. Again, these very leaders before they have acquired their commanding positions spent many years of their life in preparing themselves for it; in training in scientic methods, in acquiring knowledge in the allied sciences and in the science and practice of clinical medicine, living meanwhile on small incomes, having no private practice at all or having a practice too small to interfere with their life ambition. You can not lead such a life unless you are possessed by idealism and a scientific spirit. That is the key to their success. And when these men become teachers, they can not fail to impart this ideal spirit to their students. That is the way they themselves received it. But they received it also in the institutions of their early education, where sport and habits of millionaires' sons are not the factors which form the character of the youth. They received it from the people among whom they grew up, among whom the worth of the individual is not measured exclusively by a gold standard. They received it from the care and encouragement of the government which, no matter what its political ideals may be, never loses sight of the fact that the cultivation of science is one of the greatest assets of a people. They received it in the traditions of medicine of their country; even before the new era when medicine was all in a cloud of so-called natural philosophy, only the substance of medicine was all wrong, its spirit was all right.

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[2] Congress of Science and Art, 1904, v, 395; chairman's address.

That is the situation abroad. Now let us look at the development and the present status of clinical medicine in this country. At a glance one observes with amazement that nearly all the factors which favored the development of a scientfiic spirit in Germany are absent. However, I shall not try to enumerate all the shortcomings with which the development of medicine in this country had and still has to contend. There is no educational advantage in doing it and you are all familiar with the situation. On the contrary, I take pleasure in pointing out the encouraging fact that, despite all the difficulties, medicine in this country gradually rose to a commanding position in many respects. It is an instructive and stimulating fact that the progress of medicine in this country was carried on through the efforts of a few high-minded men or groups of men who at various times transplanted the spirit prevailing abroad into this country. I shall, of course, not attempt to enter into the particulars of the history of this progress. I wish to refer briefly, however, to a few phases in this history. In the first important phase, clinical medicine in America received an elevating impulse through the activities of a group of medical men who continued their studies in France, where they came especially under the influence of the famous clinician Louis. Statistical methods of observation of diseases and diagnosis by auscultation and percussion became, then, the chief characteristics of internal medicine in this country. During the second period, young American physicians pursued their postgraduate studies in Austria and Germany. They brought home a knowledge of gross and minute pathologic anatomy and an aptitude for the use of the microscope. Pathologic societies were started and the teachers of medicine began to give separate lectures on pathologic anatomy and to instruct in the use of the microscope as a clinical aid. The studies and teaching of these new subjects gave at that time a scientific flavor to clinical medicine. The last period covers about the three last decades with the contradictory results of which we are confronted to-day. Again, medical men went abroad for postgraduate studies and perhaps in larger numbers than ever. But what this high class of young medical men studied there now was no longer in the direct interest of clinical medicine; they trained themselves in the intricacies of the sciences of medicine. The results of the studies of this period were again of great benefit to medicine in this country; in fact, they were of greater benefit than ever. In a comparatively short period the special sciences of medicine, thanks to the activity of a brilliant group of men, have gained a strong foothold in this country; special chairs and laboratories were created in many schools of medicine for pathology, physiology, bacteriology, pharmacology and physiologic chemistry. The work which is being accomplished now in these laboratories compares favorably with the work done in the countries with older scientific traditions and much more favorable surroundings. However, by this very departure clinical medicine itself suffered a visible retardation in the development of its own department. I discuss this phase not with pleasure, but the truth must be said. To my mind it is a fact that the leading clinicians of this generation do not compare favorably with their predecessors in this country, not to speak of a comparison with the leaders of clinical medicine in other countries. One of the reasons for the retardation in the progress is the loss to clinical medicine of the brainy men who now devote their energies to the pure sciences of medicine. Another reason may be found in the fact that by giving up pathologic anatomy and microscopy to special departments clinical medicine lost that part which has given it formerly its scientific character. An evident drawback to the progress of internal medicine in this country is the fact that its teaching at the present time is mostly still in the hands of men who received their medical training nearly exclusively in this country and at a time when pathologic anatomy was the exclusive basis and auscultation and percussion practically the exclusive methods of diagnosis. But in the last twenty-five years internal medicine changed its aspect greatly. The men who want to teach the medicine of to-day must have an education and training radically different from those which were customary and sufficient in former years.

However, the greatest evil of them all is the deplorable fact that in most instances internal medicine is taught in this country by very busy consultants who can give only a small fraction of their time and mental energy to this one of the side issues of their busy lives. Teaching medicine and furthering its science is a very serious business which ought to be carried on by men who are ready to devote all or most of their time to it.

Here are problems for you to solve. The progress of clinical medicine in this country has to be accelerated again. We might reach the level which we have seen to exist abroad. But we ought to strive to get still higher; in this field lack of modesty is a stimulating virtue. Look at the allied sciences of medicine, the level of which they have reached in a comparatively short time without any tradition and only through the activity of a small group of high-minded men. The progress of medicine in this country was always carried on by the few and not by the masses. Clinical medicine must reclaim some of the brainy young men who were enticed by the sciences of medicine. You represent a new generation. You have had an education and a training in modern medicine and the allied sciences. You have a training in investigation, the constitution requires it of you. The constitution which you have adopted shows your spirit. Among its objects is "the cultivation of clinical research by the methods of the natural sciences and the diffusion of a scientific spirit among its members." But you will accomplish more; the constitution imposes on you the obligation to be active in the diffusion of the principles of the society particularly among the students who come under your charge. I would recall this obligation to the minds of the members who were called within this year to chairs of medicine at influential places. The constitution does not keep you down exclusively to science, but let me tell you: beware of practice. It is a bewitching graveyard in which many a brain has been buried alive with no other compensation than a gilded tombstone.

One last word. The men whom you now see sitting on the bank left behind while the boat of progress swiftly glides away with fresh winds and under fresh sails were themselves in their youth passengers of similar boats and cut faces at others who were left behind. Be generous to them, but do not repeat their mistakes. The secret is: never leave the boat.

Rockefeller Institute for Medical Research.

Original Articles

THE NEED, METHODS AND VALUE OF MEDICAL COLLEGE INSPECTION*

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That we have in this country no national body having legal power to charter and control educational institutions is generally understood. Under our system of government this control, along with the licensing of physicians, belongs to the police powers of the various states. In the majority of foreign countries, however, there are national boards or committees which charter all schools, including medical, and which insist on definite standards being maintained.

This country is still comparatively young and in some respects has not attained full growth. Our educational institutions have been allowed to shift for themselves and, of course, much confusion of standards has resulted. The past eight or ten years, however, has seen a gradual development toward system and in the last few years particularly rapid progress has been made. At the present time only three or four states regulate the chartering of institutions, while in the majority of states any body of men can secure articles of incorporation for a college or school by paying the required fee, no question being raised regarding the ability of the incorporators to furnish education.

As might be expected, we have, taking the country as a whole, a large number of educational institutions—including medical colleges—with a great variety of methods and standards. We find some high schools and academies attempting to teach college subjects to students from the elementary grades and, worse still, we also have so-called colleges and universities teaching high school subjects and granting baccalaureate degrees on that basis.

VARIETY OF "MEDICAL COLLEGES"

When we come to the institutions professing to teach medicine in whole or in part, we find even greater confusion. From the various healing cults which have no use for the fundamental principles of medical science up to the thoroughly equipped, high-grade university medical schools—and all must be included in any complete investigation of medical education—this country has more medical schools than all the rest of the world combined and, on the whole, lower standards than are to be found in any other country.

The medical cults referred to have practically no standards or, at best, enforce only a common school education for admission and give a two or three year course, after which they turn out "doctors" of this, that, or the other—it does not matter to the average layman who doesn't know the difference. But even among the schools usually included in the term "medical colleges" there is a most amazing variety of standards. There are several, the entire equipment of which consists of a blackboard, a table and some chairs. There are some which merely drill their students in answering questions asked at state board examinations, having no use for laboratories and clinics. Meanwhile the graduates of these schools usually succeed in passing the state license examinations. There are colleges which grant the degree after a course given in the 2½ or 3 hours at night for four years of 30 or 40 weeks each, which, to equal the actual time spent by students in our day schools, would require from 12 to 14 years. There are still colleges at which ungraded courses of lectures are given year after year to all classes alike. There are legally chartered medical colleges located in towns so small as to make clinical material seriously limited or entirely lacking. There are several at which no clinical training in obstetrics is given and more at which no postmortems are seen by the students and where there is no opportunity to study gross pathologic specimens. On the other hand, there are numerous grades of institutions up to the small but increasing number of high grade medical colleges which are probably equal to any in the world.

I have given only a brief statement of the amazing variety of institutions professing to teach medical students and which are annually turning out armies of those who seek the privilege of practicing medicine. While many are thoroughly competent, there are, doubtless, many who are illiterate, untrained and decidedly incompetent. While they differ greatly in their educational qualifications and possibly in their "methods of treatment," those who, by whatever hook or crook, secure the right to practice will be alike in this respect: they will all be required to differentiate between health and disease, to determine the nature of diseases, deformities and injuries, and to stand between life and death in many of the cases to which they may be called.

IMPORTANCE OF STATE BOARDS

Under our form of government, the only legal barrier which stands between a sick and suffering humanity and this job-lot of would-be practitioners is the state licensing board. How important it is, therefore, that the state board be given full power, and that all obstacles be removed from its path. The splendid work that has been done by these boards, often in spite of many difficulties, is the most hopeful sign that this problem will, in time, be properly solved.

At the present time, however, too many obstacles are hindering the boards from obtaining the best results. There are now some 65 or more boards in the 50 states, only a few of which are given sufficient financial support to permit of the best work, and many are continually having to contend with the inconsistencies of legislatures, which, after adopting strong medical practice acts, containing fair educational standards, proceed to limit seriously the board's power by granting special legislation to this, that or the other medical sect, providing for special standards or special boards. It has been stated by attorneys that, if fairly tested in the courts, such special legislation would probably be declared unconstitutional. The solution of the sectarian problem seems logically to be the adoption of an educational standard with which all medical schools professing to train those who are to practice medicine and differentiate between health and disease must comply. If it can be ascertained that the medical school is up to that standard and the graduate passes the examination, then grant a physician's license and let the holder practice by whatever method his educated common sense may dictate.

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* Read before the Nineteenth Annual Convention of the National Confederation of State Medical Examining and Licensing Boards, Atlantic City, N. J., June 7, 1909.

INVESTIGATIONS OF MEDICAL COLLEGES NEEDED

Such an educational standard could not be drawn up without a complete knowledge of the conditions existing and nothing would more thoroughly reveal the need of an effective regulation of medical practice and thereby strengthen the power of state examining boards than a thorough investigation of medical education, including an actual inspection of every institution professing to teach medicine. This investigation should be national in its scope and should be free from any political, local or sectional bias. If thoroughly made it would be of much benefit in many ways. Low grade and fraudulent institutions would be exposed properly, while colleges which are honestly endeavoring to keep abreast of the increasing demands of medical education would be benefited. The necessity for the endowment of medical education could be emphasized and deserving schools pointed out. Such an investigation would also simplify the work of the State Examining Boards. It would reveal the schools which state boards would not care to recognize and, although some practice acts may require that the board itself make inspections before the withdrawal of recognition, such inspections would need to be made only of the colleges which were declared unsatisfactory by this investigation. From the standpoint of expense alone, each state board could scarcely be expected to examine every medical college in the country and fifty different inspections by as many different boards would be poor economy, would lead to much confusion and would be an unnecessary burden on the medical college.

I have purposely used the word "investigation," since to obtain accurate knowledge would require much more than is usually meant by an "inspection." Nevertheless the inspection is a very essential part of the investigation. In fact the inspection should be an investigation at first hand, on the premises, to find out whether the college really exists, what it has in the way of equipment and what it is doing. Without this actual inspection any investigation is far from complete, considering what is so generally known, that statements made in medical college announcements can not always be relied on. You all have doubtless heard it remarked that a statement not strictly true may be so often repeated that the narrator comes to believe it true. At any rate, at the inspections the investigator will sometimes hear statements which are not borne out by the facts. During the investigation, therefore, nothing should be taken for granted and leading questions should be avoided. Careful notes should be taken and as much corroboratory evidence should be secured as possible. These statements may seem harsh, but to learn the truth the methods outlined are in some instances quite necessary. If falsification in college announcements has been resorted to or if wrong or misleading statements are made during the inspection it is highly important that the investigator learn the actual facts. Colleges which are honest in their efforts and intentions always welcome investigations and doubtless prefer that such investigations be thorough. Each college is a problem in itself and the methods followed in the investigation will necessarily vary. The following, however, will give a rough outline of some of the points which should be systematically taken up in the inspection of all colleges:

METHODS OF INVESTIGATION

1. **The Character of the College.**—Inquiry should be made to learn whether it is a stock corporation or whether a department of a university; whether its finances are controlled by the faculty or by a separate board of trustees and, if a department of a university, what control the latter has of the finances and standards. If there are departments of pharmacy and dentistry it should be learned to what extent the students are taught together and the differences, if any, in the preliminary requirements.

2. **Finances.**—The income from students' fees, endowments or other sources should be learned, as well as the various items of expenditure. Financial statements should be studied if available. The number of students enrolled and the tuition fees should be noted.

3. **Faculty.**—The relation of the faculty members to the various chairs should be learned, and, when chairs are vacated for any reason, how successors are chosen. The number of salaried instructors should be learned, the amount of time devoted to teaching and the subjects handled by each. The qualifications of the faculty members is, of course, a matter of much importance.

4. **Entrance Requirements.**—The entrance records should be inspected and also the original credentials handed in by the students. Special note should be made of the institutions granting the credentials and from any source possible a knowledge of these institutions obtained in order that a proper valuation of the credentials can be made. If any outside party, such as a high-school principal or the county superintendent of schools, passes on the credentials or conducts the entrance examinations for the medical college, he should be interviewed and his methods learned.

5. **Advanced Standing.**—The methods of granting advanced standing from other institutions should be learned and note made of the medical schools from which credentials have been accepted.

6. **Length of Course.**—The dates of beginning and ending the sessions should be obtained and inquiry made regarding holidays, time allowed for matriculation and the requirements of attendance at classes.

7. **Character of the Curriculum.**—The lecture or class schedule actually in use by the college should be studied to learn whether the course is graded, to see what subjects are being taught and by what methods: lecture, laboratory or clinic. If clinics are mentioned it should be learned whether they are held at the college dispensary or at hospitals, and what hospitals.

8. **Buildings.**—The condition of the buildings as regards care and utility should be noted. Ample space for the accommodation of the classes and ample provision for light, heat and ventilation are of more importance than architectural beauty. General cleanliness is important since aseptic methods cannot well be taught in filthy buildings and laboratories.

9. **Laboratories.**—The number of laboratories, the subjects taught in each, the equipment and the evidences of recent active work are of much importance. This furnishes a fair idea as to whether or not the college is keeping up to date in its methods of teaching. Any

evidences of original research should be noted. The inspector should examine students' note-books, tracings or other evidence of students' work. The presence of an all-time, salaried instructor and the character of his work are usually indicated in the appearance of the laboratory and equipment. According to the subject taught in the laboratory, the following points should be noted:

(a) Anatomy.—The amount and character of the dissecting material should be noted and whether modern methods of embalming are used by which dissection is made more safe and pleasant than by the old methods. The use of cadavers for operative surgery and the use of frozen cross sections, or other prepared anatomic specimens, charts, or other modern adjuncts should be noted.

(b) Physiology.—In any laboratory which is at all equipped for teaching physiology the inspector will invariably see such apparatus as kymographs, levers, time-markers, electrical apparatus, etc. The presence of animals and frogs will be additional evidence of modern methods. Students' individual work, such as note-books, tracings, etc., will furnish a good idea of the work done.

(c) Chemistry.—Here cleanliness is an important consideration. The presence and character of the apparatus and reagent bottles will indicate whether the work is limited to general chemistry or whether organic and physiologic chemistry are also taught. Outlines of the courses taught should be studied if available.

(d) Histology and Embryology.—The supply and character of microscopes, microtomes, bottles of blocked specimens, or cut sections will usually be seen. Any additional apparatus such as stereopticons, charts, etc., should be noted. Evidences of active work by teacher or students are important. For embryology the same apparatus and in addition the presence of incubators, charts, models or other adjuncts should be noted.

(e) Bacteriology.—An ample supply of good oil-immersion microscopes is a necessity. Note should also be made of sterilizers, incubators, test tubes, prepared media (potato, gelatin, agar-agar, etc.) and cultures. Cleanliness in this laboratory is of particular importance for the sake of the student himself as well as for the reliability of his work. The presence or use of animals and the manner of caring for them should be noted.

(f) Pathology.—An ample supply of microscopes is necessary, unless those used in histology or bacteriology are easily accessible. The number of gross and microscopic material should be noted. If any postmortems are being done by a careful instructor, there will usually be evidences of it in a supply of preserved gross specimens in this laboratory or in the museum.

(g) Pharmacology, Materia Medica and Therapeutics.—Note should be made of laboratories for these subjects, particularly the first, and any available outlines of work should be studied.

(h) Clinical Laboratories.—Of great importance are the facilities for training students to make the various laboratory diagnostic tests of blood, urine, sputum, etc., and note should be made of any laboratories for the purpose and whether they are amply equipped with microscopes, reagents, stains, burettes, blood counting outfits, etc. Small laboratories for this purpose are sometimes found in hospitals, in which case it should be learned whether the students have regular work there or whether the work is all done by the internes.

(i) Other Laboratories.—Any advanced research, public health or other laboratories should be noted, but particular inquiry should be made as to the part such have in the training of medical students, since that is the chief function of the medical college.

10. Dispensary.—It should be noted whether a suite of rooms or a single room or merely the college office is used for dispensary purposes. The sanitary condition of these rooms, the equipment, and the evidences of active work are important. If possible the visit should be made during the regular dispensary hours that it may be seen how many patients are in attendance and what part the students have in the examination and care of these patients. The records of patients should be inspected and the average daily or weekly attendance noted.

11. Hospitals.—All hospitals at which the college claims to hold clinics should be visited and evidence obtained regarding the actual attendance of students. The average number of patients in the hospital and particularly the average number of free or ward cases which can be used for teaching purposes should be learned. The number of clinics per week held in each hospital should be noted and whether they appear on the lecture schedule or not. The amount and character of the work done by the students in the examination and treatment of patients is of particular importance, as well as the opportunity for training in the various departments of medicine, surgery, gynecology, obstetrics, pediatrics, etc.

12. Maternity Work.—Special inquiry should be made regarding the number of cases required of each senior student, the extent of the student's responsibility in the handling and care of each case, the number of cases obtained and where they are obtained. Maternity wards of hospitals should be visited and the actual number of patients noted.

12.—Library.—If the college has a medical library, note should be made of its accessibility to students and the arrangements for the students' comfort, the presence of a librarian, the number of modern and useful text and reference books and the number of useful medical periodicals. Only too often there will be found a lot of old, out-of-date volumes of no particular use to medical students. Of far more importance than the mere presence of a medical library are the evidences that it is used and useful in the training of medical students.

14. Museum.—It should be noted whether there is a good supply of modern useful anatomic, pathologic, surgical, obstetric or other specimens or whether the collection consists merely of old, useless curiosities; whether the specimens are labeled; whether an index is kept and, in connection with the pathologic specimens, whether the clinical histories are systematically filed for reference. In fact, the important point, as with the medical library, is the extent to which this museum is used in medical teaching.

15. Special Features.—Note should be made of any special features, such as freezing plants for preserving cadavers, animal houses or dog hospitals, and of any special apparatus, as reflectoscopes, Roentgen-ray outfits, charts, models, manikins, etc.

16. Supplementary Information.—Besides the information obtained directly through the inspection, other sources should be looked to for whatever will aid in forming an accurate idea of what the college is doing. The finished product, the graduates of the colleges, should be considered. The success or the failure of its graduates at state license examinations, their success and standing among practitioners and educators, the places they secure in hospitals, public health positions and elsewhere wherein they can show the training received while in the medical college—all these facts are of much importance.

OTHER FACTORS

This outline has not been given with any intention of indicating a complete equipment for any medical college, nor should there be any fixed requirement of equipment any more than there should be a hard and fast curriculum. After all has been seen and learned, much must be left to the judgment of the inspection committee. While the entire absence of equipment is serious, the mere fact that apparatus is present is of little consequence. There may be dissecting tables, but no anatomic material and other evidence may lead the inspectors to believe that no dissecting is done. There may be a stereopticon, but close observation will show no connections to allow of its use. In one state where a fixed supply of apparatus is required by the examining board, colleges were found with a full supply, but having no one who knew what the various articles were for nor who was capable of making use of them. There may be beautiful buildings or an abundance of dispensary and hospital material but an absence of proper supervision so that little use is being made of them. There may be a large, well-stocked library, but inquiry reveals that it is closed except for a few brief hours each week, or it is otherwise inaccessible to the students. A college may have an abundance of expensive apparatus in its laboratories, but investigation may show that enormous classes, not only in medicine, but in dentistry and pharmacy, may be crowded through the course in a wholesale manner bewildering to the student and very detrimental to his training.

On the other hand, a college may have a comparatively meager equipment, but there may be many evidences of careful oversight, showing that a splendid course, including laboratory training, is being given. So long as the equipment is being used, it is probable that the simplest, possibly home-made, apparatus is to be preferred, since the student will be more apt to provide himself with such apparatus and continue his laboratory methods after he goes into active practice than he would if his training was altogether with complicated and expensive equipment.

An accurate knowledge of foreign medical education should be obtained, not only to see how the standards abroad compare with those of this country, but that any strong points may be adopted and the weak places avoided. As before stated, this is a comparatively new country without a fully developed educational system. There will be much benefit derived, therefore, from a study of educational systems of foreign lands which are the result of several centuries of development.

The investigation should be an effort to obtain from all possible sources all the facts regarding medical education, bearing in mind that the teaching of medical students is the first work of the medical school. The chief aim in the fixing of any minimum standard should be that the finished product of our medical schools may be well trained and fully qualified physicians. Before any committee can draw up an acceptable minimum standard it must obtain complete knowledge of the weakness in our system of medical education as well as of the points wherein we excel, and the only way to obtain that knowledge is by a thorough investigation of medical education, including the actual inspection of every medical college.

103 Dearborn Avenue.

Charity.—If all the money available for charitable distribution were properly expended, the suffering of the unfortunate would be much more largely limited than it is under present methods.—B. E. Nelson, in *Hygiene and Physical Education.*

THE METHODS AND THE OBJECT OF STATE EXAMINATIONS *

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In any discussion of this subject it would seem that at the outset certain general propositions may be stated to which all will agree. Certainly the primary object to be attained by an examination in medicine conducted by the state is to certify that certain individuals are capable of rendering useful service to the citizens of the state in matters pertaining to health. The law in this respect has a certain analogy with the pure food laws. The public realizes that it is unable to distinguish the false from the true, and places the matter in the hands of a committee or board who by proper methods of inquiry will make this differentiation and give the approval of the state to the true wares. In the pure food laws the differentiation is easily made by the application of tests, which, though they may vary somewhat in complexity and difficulty, are sufficiently accurate. When the objects of test are individuals instead of chemical substances, the test is much more difficult and the responsibility of the testing is much greater.

To these matters the general public which is the most concerned show an indifference which is founded on ignorance. Both the pure food laws and the medical-practice acts have been forced on a public indifferent and often distinctly hostile. Medicine is destined in the future, to a greater extent than it has in the past, to play an important, perhaps the most important, rôle in the social life of the people. Nothing is of so much importance to a nation as the health of its people and the vast possibilities of preventive medicine are just beginning to be appreciated. The realization of preventive medicine will be possible only when the present ignorance concerning disease and distrust of preventive measures are replaced by knowledge and confidence. It has seemed to me that a part of the distrust which has found expression in the satires of every nation is warranted, for medicine in the past has been influenced too much by dogma, by empiricism and superstition; even now these influences have not disappeared.

What are the qualities which we are warranted in insisting should be the result of the training of the student and which he must possess to render efficient service? I do not hesitate to give the first place to knowledge of methods and familiarity with their use and application. Modern medicine is, in fact, based on methods which enable us to find out what is taking place in the sick individual. We no longer conjecture, but we ascertain by the use of our senses and by methods which represent an extension of the senses. Medicine has advanced far on the path followed by the sciences, and the medical art is now to a great extent based on knowledge which in many cases enables us to predict. There is no longer conjecture as to whether a patient has a certain infectious disease, or whether there is a certain disease of the blood or the blood-forming organs, or whether digestion is taking place in a proper manner, but the problem presented by the sick individual can and should be definitely solved by the application of tests. The knowledge on which action is based must be derived from the sick individual; it can not come from books. The records of observations and experience are no doubt valuable, but the limitations imposed by such knowledge alone are enormous. In the first place, there are few diseases of which so accurate a description can be given that recognition of the disease is possible by a comparison of symptoms with the records. The actual diagnosis is not the final matter, for the treatment is directed not to the disease, but to the condition which the disease produces in the individual. The medical man must have such knowledge of disease as to know whether in a given case the disease may extend from the individual to others in his vicinity or remotely, in what way the extension takes place and how it is to be guarded against. In surgery there are not only the methods of diagnosis, but the chemical and mechanical methods of treatment. The medical man must not only be able to use all these methods, but must be able to make the deductions which are justified from the knowledge obtained by methods.

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*Read at the Nineteenth Annual Convention of the National Confederation of State Medical Examining and Licensing Boards, Atlantic City, N. J., June 7, 1909.

We must go further. We are justified in demanding not only facility in the use of methods, their application and the proper use of knowledge gained by observation, but we also must demand thorough training in the fundamental branches of medical science. This for two reasons:

First, it is necessary in order that the student may acquire the habit of mind which will enable him to distinguish between proof and statement, knowledge and conjecture, which will lead him to appreciate new knowledge, and to strive constantly to increase both his own and the sum of knowledge. We are certainly much more appreciative of new knowledge at this period than ever before, and yet it has taken a long time for the body of physicians to become thoroughly aware of the fact that tuberculosis is an infectious disease. Such knowledge as that regarding the nature of malaria and its mode of extension, the mode of extension of yellow fever and of plague should extend much more rapidly than has been the case. When medical men have been called on to deal with situations in which knowledge of disease should have governed their actions and enabled them to cope successfully with the conditions, have they not frequently proved themselves to be ignorant or at least unappreciative of new knowledge? We might cite typhoid fever in the Spanish war, in which case there was certainly enough knowledge of the disease and the conditions of its extension to prevent the appalling loss of life, and the plague in San Francisco, the existence of which for so long a time was unrecognized or denied. Have we any assurance that the conditions of 1898 would not be repeated in case of another war? How much confusion remains as to the diagnosis of malaria and typhoid fever when their differentiation is so simple!

Second, the knowledge of the fundamental sciences is necessary because it is of constant use. The laboratory teaching which is becoming such a prominent factor in medical education gives the proper mental training and the objective knowledge. Medicine is a branch of biology in which the phenomena of living matter in an abnormal environment are studied. How ineffective must be such study when not preceded by study of the phenomena of living matter in a usual environment!

How shall these necessary qualifications be determined? It is obvious that the diploma of the medical school can not be accepted as evidence that the holder possesses the proper training and knowledge. If the state certifies to fitness it must itself determine this either by taking over the education, as in a state university, or by an examination. It has been found, however, that even when the state gives the education a final examination to test its character is necessary. In certain of the states some supervision of the medical schools is exercised through the board of medical examiners. There would seem to be no doubt that such supervision is capable of a salutary influence on medical education. There are two dangers connected with it:

1. It is difficult to make the supervision effective—to see that the medical schools really conform to the conditions imposed by the state board in their actual conduct and do not merely insert the conditions in their catalogues. It would be difficult to obtain any real idea of the state of medical education in the country by a diligent study of the catalogues of the schools. A catalogue is a very human production and, consciously or unconsciously, the imagination has a pretty free play in its formation.

2. If, on the other hand, the supervision is real and effective, it can easily be meddling. All who are engaged in teaching medicine must realize that medical education is now in a very unsettled condition. The subject-matter has enormously enlarged, and there is undoubtedly the attempt to teach too much, to hold on to the old traditional teaching and to add the constantly increasing new knowledge. Thirty years ago the only laboratory in the medical school was the dissecting room in which human anatomy was taught, usually by a man who had no conception of the general subject and who took the time for a course of lectures out of a busy practice, his anatomic teaching being, in commercial parlance, a by-product. The laboratory side has now developed enormously and there is a feeling which seems to be more prevalent in the laboratory than in the clinical teachers, that the laboratory unconnected with the clinic has been unduly developed. In the present conditions in our medical schools, in which there is, save in a few fortunate instances, no real amalgamation between the school and the clinic, no power of appointment by the school of its clinical teachers, it has been easier to develop the laboratories and to consume in them a large part of the obligatory four years. There is in most instances too sharp a separation of the laboratory and the clinic and lack of application to clinical problems of knowledge derived from laboratory work. There is less uncertainty with regard to the advantages of a preliminary training in science before medical studies are entered on, but there is much uncertainty as to the extent of preliminary training which should be demanded. Depend on it, those engaged in medical teaching will work out these problems better than an outside body. As I have looked over the requirements for examination in certain of the states it has seemed to me that the element of protection has entered into demands of some of them. A definite curriculum of study is demanded by some, and in certain instances the requirements directly conform to the scheme of medical education in the state universities. Certainly this serves an end, probably an important one, in bringing the entire scheme of legislative protection into disrepute, but this is not the end aimed at. After carefully weighing in my mind the advantages and disadvantages of state supervision and control of medical education, I think more is to be gained without it and that medicine had better be on a square free trade basis.

The most effective control combined with perfect independence in medical education can be exercised through the state board examination and on the character of this everything depends. The present method of these examinations is unsatisfactory and has about reached the limit of its usefulness. The examination consists in giving a number of questions on the different medical subjects, the answers to which are written out and afterward marked by the examiners. In conducting the examination there are various more or less elaborate rules, the reading of which gives one a rather pessimistic view of human nature, which are designed to prevent impersonation and other forms of cheating. Written answers to questions can not test the candidate's knowledge. They may test information which he has acquired from reading or lectures. They form no test of his power, of his ability to carry out methods of work, and to apply these methods in the treatment of disease.

I have recently examined a book compiled by Dr. R. M. Goepp and published by Saunders & Co., entitled "State Board Questions and Answers." The stated purpose of the book is "to provide a convenient compend for the use of those who wish to prepare themselves for the state board examinations." The material embraced in the 631 pages is selected from state board questions asked during the past four years, the preference being given to those asked in the larger and more representative states. The collection of the questions was undertaken by the publisher, the author, with the assistance of several persons named in the preface, being responsible for the answers only. The first impression on going over the questions is that they are rarely so framed as to bring out any exact knowledge in the answer. They are text-book questions compiled from text-books, which are themselves compilations. All of the old questions for which definitions of formal content could be given are there. The answers are generally unsatisfactory, often vague, often inaccurate. Many of the questions would really demand rather a discussion of a subject; from which discussion valuable information of the candidate's knowledge could be obtained, than a categorical answer. For instance, to the question, "Give a general explanation of the pathology of edema and include its chief factors," the answer is given in sixty words. Still, after an examiner had gone over 100 books, he would probably be thankful for the concise answers, even though in many cases it would be difficult to interpret their meaning. The book serves a valuable purpose in one way, for it ought to be possible for a good student well versed in examination methods, and with expert tutoring which would involve some elimination of unusual questions, to pass any written state board examination, after three months' close study—this without having ever seen a patient or the inside of a laboratory. Certain of the poorer medical schools, knowing that their men must pass the state boards or they must close their doors, have adapted their instruction to this end with great success; and such books as that referred to will prove a valuable addition to the library of both teacher and student. Whether the scrappy and often false information obtained by the study of such a book has any other value is uncertain.

The examination, to be effective, must be practical. The candidate must show, not what cramming, but what medical training he has had and what he can do with the knowledge he has obtained. At the first sight there would seem to be many difficulties involved in the change from the written to the practical, but they are not so serious as they appear to be. It has been found possible in other countries to base the grant by the state of authority to practice on an examination of practical character, and it seems really absurd to say it can not be done here. We have only to adopt methods which are practical, which have been tried and approved elsewhere. Such examinations would undoubtedly demand the use of laboratories and of hospitals for their conduction, but they could be obtained. Examinations should not be held in cities where such indispensable aids can not be obtained.

The simplest part of the examination would be in those divisions in medicine in which the instruction is given in laboratories. Arrangements could be made by the examiners for the use of the laboratories in which the instruction is given. All good schools require a practical examination in anatomy, histology and embryology, physiology, physiologic chemistry, pathology, and bacteriology, and no difficulty has been found in giving it. In all of these branches the examination would doubtless include the recognition and description of specimens, and the demonstration of ability to do the technical work demanded by the study. In addition to this, a few wisely chosen questions could be given to show that in addition to technical ability the candidate has some appreciation of underlying principles and of the bearing of the study. In anatomy a part of the examination should be devoted to the demonstration of regions on the living model. With these examinations could very properly be included the examination in clinical pathology, covering such matters as the chemical and microscopic examination of the urine, stomach contents, feces, blood, etc. For this last examination certainly more time would be required than for any one of the others and the marks given should be based on the time required and the importance of the subject. A student might very well be passed who had hazy ideas about bones, ligaments, and muscle relations, or who failed to detect the differences in appearance and structure of certain nearly related tumors or who had unconventional ideas as to cell origins, but inability to examine sputum, urine and blood should cause his rejection. With the time which is given in all schools to laboratory work we are warranted in giving a rigid examination in the laboratory branches and in demanding that the work should be of such a character as not only to give the necessary discipline, but to teach thoroughly those procedures which are to be used in practice and on which the accuracy of clinical work chiefly depends.

These examinations would consume not less than ten hours, with some leeway allowed to the slower men, and should be distributed over two days. The candidates could be divided into batches of twenty-five and the examinations conducted by one chief examiner and one assistant. In such an examination it would not be necessary to take any very elaborate precautions against cheating. The question very properly comes up as to what time in the medical course such an examination should be held. I think, on the whole, it would be better to allow candidates to take it either in the middle or at the end of the course. This would give the advantage of weeding out at an early period the men who were totally unfit and of allowing some who failed to go back and make up again. The candidate should be passed or rejected on the examination as a whole and not allowed credit for any single branch. I have estimated the expense of such an examination at $1,000 for 100 men examined at one period. This allows $25 a day for three days' work of the chief examiner and $15 a day for the same time of the assistant, and $160 for general expenses in providing apparatus, etc. It is possible that this is too little, but for many reasons it is not desirable to place the remuneration of the examiner at too high a figure, and the element of rendering service to the state should enter into the compensation.

The second part of the examination embraces the purely clinical. It should be thorough and practical. It will be necessary to have patients and to make some use of a hospital. The patients may be selected chiefly from the dispensary ambulant material, and among these cases can be found illustrative of the more common diseases of organs. The candidate should be given the necessary appliances, chemical and physical, to be used in diagnosis and should show not only his ability to use them, but to understand their use. How much use would be made of acute cases in the wards is uncertain. Certainly in the beginning of this method of examination it would be well to excite just as little opposition as possible. Any objections on the part of the patients themselves to their being used for examination purposes could be easily overcome by a small fee. It would be well, of course, to include with the sick a certain number of the normal. The examination in surgery also would offer no difficulties. Numbers of surgical diseases can be found in the ambulant material, both acute and chronic conditions, which could be diagnosed, described, and treatment indicated. Certainly a part of the surgical examination should consist in the preparation of a patient for an antiseptic operation both under conditions in which all appliances are at hand and under more primitive conditions likely to be encountered. The examination should also deal in some measure with psychiatry, that greatly neglected branch of medicine. It is entirely possible either to take the candidates to an asylum for examination or to use cases which could be brought to the examination rooms. The candidate should demonstrate his ability to diagnose the more common forms of insanity.

It is probably not possible to conduct a practical examination in obstetrics and gynecology. In obstetrics the manikin can be used with advantage, but this would have to be supplemented by the written or oral examination. It might be possible to introduce a few cases of early pregnancy among the ambulant cases and have the candidates understand that they might be required to examine such a case. Just as in the primary laboratory examination certain questions might be asked for written answers, and it would be much better that histories, diagnosis and treatment of cases assigned should be written. I do not think it would be necessary to conduct special examinations in the skin and other specialties. Among the cases selected, patients illustrating many special pathologic conditions could be included and given out for examination. The candidate could not tell whether he would receive a case of psoriasis or laryngeal tumor, diabetes or chronic disease of the kidneys or liver. In any case it is essential that he be given the apparatus for diagnosis and opportunity for its use.

The examination in hygiene would be partly covered by the examination in chemistry, bacteriology and physiology, and if all the other examinations were successfully passed it might be assumed that the candidate would know the most essential matters in the subject. Such an examination would probably consume ten or twelve hours, and for 100 men examined in groups of twenty-five would extend over three days and would probably require six chief examiners and six assistants who would receive the same compensation as in the first examination. I have thought that such an examination, allowing liberal compensation for patients, for use of apparatus, etc., could be held for $1,500 for 100 men. This gives the cost of the entire examination at $25 per candidate. This is, of course, the bare cost of the examination with a proper compensation for the examiners, and it does not seem to me that there should be much additional expense. A permanent secretary who would have to give some part of his time to the work would be necessary, and some expense in addition would be incurred. I see no objection whatever to raising the fee sufficiently to include such expenses. The fee with a corresponding lengthening and increase in the efficiency of the examination might be made $50 or even $100. Of course, difficulty would arise in regard to the medical sects, but these sectarian differences chiefly or only concern therapeutic measures, and the sectarian candidates who had successfully passed the other examinations could be turned over to sectarian examiners for the therapeutic examination. No osteopath, homeopath, eclectic, hydropath or Eddyite could object to their candidates being required to show practical knowledge in anatomy, physiology, chemistry, clinical methods, and the general features of disease. Certainly we would feel that such men were to be trusted, no matter under what banner they chose to serve.

The final examination should be given to candidates only who have successfully passed the primary. Whether the two examinations are taken separately or together may be left to the choice of the candidate.

The objections which have been urged against this practical examination have never concerned the real question as to whether or not it is the best method, but have been mainly on the score of expediency. I can not help quoting the objection urged by the president of one of the state boards. He says:

> "We examine for instance at a single examination four hundred applicants. All of you gentlemen I take it are practitioners of medicine; are there any of you who have had a patient in the hospital that you would be willing to have these four hundred men pound on the chest to ascertain the condition of his lungs, or to see whether he had a heart lesion or not? I don't think you would."

Such objection does not have to be met. At any rate his board could not give a practical examination for the fee demanded, $10. Another objection is on the score of expense. I have shown that the examination can be held for the fee charged by most of the states and the examiners paid. It is absurd to think that men capable of giving a proper examination can be obtained without compensation. A third objection is that the examination will take more time than the written; and this, of course, is true. But the candidate at about this period of life has plenty of time, the examiners are compensated for their time, and the thorough examination has great educational value. A fourth objection which has been urged is that the candidates may be known to the examiners and favoritism shown. This is a pretty low objection and it does not hold, for there are many examiners, and a candidate who passed one examiner by intrigue or favoritism would be pretty sure to be rejected by the others. If a candidate has the qualities which would incline all the examiners to favor him regardless of the knowledge shown, he might be a useful man in the profession.

The last objection, and probably the most serious, is that the state boards as at present constituted are incapable of holding such examinations as are here indicated. The men in every state who are most capable of conducting proper examinations and who have hospital and laboratory connections which afford facilities are generally teachers of medicine, and as such are excluded from examining boards, and there is some justification for this. Men who have been a number of years in practice and who have not had special training are incapable of holding proper examinations in many of the subjects in medicine. I regard the examination as the most difficult part of my work; and how can a man without special training examine in such subjects as anatomy, physiology, bacteriology and pathology? The difficulty, it seems to me, could be met by appointing men as examiners who had made themselves capable by a special training to this end. Among the recent graduates of medical schools, men perfectly capable of acting as examiners or who could make themselves capable by work directed to this end can be found. I hold, however, that if a man has not had the training and has not the knowledge which qualifies him for the position of examiner in a subject he should not accept the position if offered him.

I can not close this paper without apologizing for my temerity in offering advice to men who have a most difficult position to fill and whose work has been faithfully performed and of great benefit to the public, to the medical profession, and to education. But it has seemed to me that by a somewhat radical change in the method a very much greater amount of good can be accomplished. The position on the state board of examiners is one of great responsibility, for on their action depends the value of the relation between medicine and the public, and they hold in their hands a lever of immense power; in fact, they are the chief agency for the uplift of medical education. At the present time there is no medical position in state or university which is of equal importance and responsibility. I know that there are difficulties in the change in the method of examination which I have advocated, but the difficulties are not so great as those which were in many states overcome in the establishment of medical examining boards.

These difficulties may not be overcome at once, but they finally will be. Let us convince ourselves that we want to find out whether or not a man can do properly the things which are demanded in the practice of medicine, and that we can not find this out by asking a question and requiring a written answer, but we can demand that he show us his ability. We would not test a bricklayer's ability by questions and written answers, nor can we test any art in the same way. A painter must be able to paint; whether he can describe the process or not does not much matter. Medicine is an art, and its success depends on the proper use of many methods. I am further convinced that it is most important to begin the change in examination methods and to begin along the line of least resistance, adding more and more subjects at each examination. I will not admit that the plan is not capable of being carried out, and it is our part in every way to assist the state boards in carrying out their arduous task.

THE MOVING PICTURE SHOW

A NEW FACTOR IN HEALTH CONDITIONS

HOWARD D. KING, M.D.
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The development of the cheap moving picture and musical theaters as factors in the health of the community seems to have escaped the notice of the medical press. To-day every village and hamlet in the United States boasts a moving picture show. In the large cities of the north and east it is not unusual for a hundred and often more to be in operation. In Europe they are outnumbered only by the public houses and cabarets. As is well known, the great majority of these theaters exist where the population is greatly congested, as in tenement districts and laboring settlements. The reason for this is obvious. It is the patronage of the poorer classes which makes the moving picture industry a paying proposition. These cheap theaters are usually located in old rookeries or poorly paying commercial sites, as abandoned shops of small tradesmen, etc. In the construction or building alteration of these places for their special needs the one object in view is to obtain a maximum seating capacity in as small a space as possible. No attention whatever is paid to ventilation and not the slightest heed given to the simplest sanitary details. The health or comfort of the patron is a secondary consideration. Municipal regulation is limited to fire prevention and safety exits—and this only after several serious catastrophes.

The performances are continuous, and thus an ever-moving stream of humanity, constantly passing in and out, stirs up dust and dirt that verily reeks with tubercle bacilli. The programs in these resorts have been considerably lengthened owing to the keenness of competition. The result is that an audience is confined within these ill-ventilated and poorly sanitated amusement resorts often for more than an hour and a half, breathing in air which has become befouled and disease-laden through lack of sufficient air capacity. The superabundance of carbon dioxid and organic matter in the air gives rise to sick stomach, headache and a drowsy feeling. The small fee of admission is responsible for a class of patronage which is entirely oblivious of the simplest health precautions. Spitting on the floor is a common practice and is allowed to go unnoticed. Signs calling attention to the dangers of the vicious habit of indiscriminate expectoration are rare. The use of the electric fan in certain of these resorts, while refreshing to the overheated patron, also serves to dry up the sputum with greater dispatch, thus increasing its disease productiveness. Cleaning the premises is impossible during the hours of operation, which gives some idea of the amount of filth that accumulates.

Robust and vigorous individuals employed as singers and musicians, appearing as often as twelve and thirteen times a day in these crowded resorts, soon undergo a remarkable change of health. Poor ventilation produces not only discomfort and loss of energy, but greater susceptibility to disease, especially tuberculosis. Many of the singers are raw amateurs and know nothing of the care and preservation of the voice, and in many instances a voice capable of greater things is lost to the public through exposure to such unfavorable conditions. Laryngeal troubles are a frequent source of annoyance to this class of people through excessive vocal effort and constant confinement. I have treated many of the singers employed by the cheap moving picture shows and found the majority of them to be of a decided phthisical tendency. The film operator who is confined in a small cubby-hole at an exceedingly high temperature falls an easy prey to tuberculosis. Constant attendance at the scene of employment, coupled with the irregularity of meals and uncertain hours, is responsible for the fact that many of the male artists become alcoholics. Taken all in all, the cheap moving picture theater artist has no easy task and sooner or later another victim is enrolled under the banner of the white plague.

The general practitioner is often consulted by a patient complaining of headache and burning eyes which run water as soon as they come in contact with strong light. After a thorough examination, including urinalysis, the patient is referred to an ophthalmologist in order that a refractive error may be corrected and the patient relieved of the headache and the visual irritation. In a great number of cases the ophthalmologist will report that there is no error of refraction and that he is unable to account for the headache and the running burning eyes. An inquiry into the habits of the patient will elicit the information that he is a devotee of the moving picture show. The constant gazing on a rapidly moving and scintillating film with every mental faculty alert to maintain the connection of the story is sufficient to produce an eyestrain of great severity and thus cause headache and burning eyes. The only remedy is rest and cessation from this form of amusement. After a few weeks vision becomes normal or nearly so and no ill results are experienced unless the patient resumes his former habits. In many cases the eye trouble assumes a severity that calls for long and persistent treatment on the part of the ophthalmologist.

Moving picture shows in tenement districts and labor settlements should exhibit pictures that tend to elevate the mind and improve the moral condition of their audiences. Pictures portraying scandal, illicit amours and criminal cupidity very often have a debasing effect on a mind that is already morally warped through environment and surroundings, thereby bringing to the surface a latent criminality. If the moving picture shows are to remain, radical changes must be made.

Rigid inspection by the health authorities is absolutely necessary. Proper ventilation by means of exhaust air fans, airifiers and other ventilating appliances and numerous apertures with sufficient air intake must be provided. The number of cubic feet of air necessary for health should be determined by the seating capacity. The flooring should be oiled, not carpeted or covered with dust-gathering material. Plush-covered and velvet-covered seats should also be prohibited for obvious reasons. Suspension of the performance at the end of every five hours, when the orchestra or seating hall should undergo a thorough cleaning, is of urgent necessity. The cleaning could be accomplished within forty-five minutes by the aid of the vacuum cleaner and should be followed by a draught of pure air throughout the place, if possible. At the termination of the day's performance the whole resort should be given the proper sanitary attention. Signs should be conspicuously posted as to the evils of spitting.

CONCLUSIONS

That a great deal of eye trouble is due to moving picture shows can not be denied. The singers, musicians and film operators of these resorts fall an easy prey to tuberculosis through excessive vocal efforts, constant confinement, irregular habits and long hours. As a disseminator of tuberculosis the moving picture theater ranks high and it will become necessary to enact special health laws to remedy the evil.

2131 Baronne Street.

HELP THE MOTHER NURSE HER CHILD

A PLEA TO PHYSICIANS NOT TO BEGIN ARTIFICIAL FEEDING WITHOUT FIRST TRYING TO HELP THE MOTHER MAINTAIN HER MILK SUPPLY *

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That no artificial food can take the place of breast-milk has always been admitted, even by those who have had the most success with artificial feeding, men like Holt[1] and Rotch.[2] In some parts of this country, however, it is uncommon to see any attempt made to induce a mother to nurse her child, even when her breast-milk has not been examined to see whether it was abnormal or not. Is this not chiefly our fault—that is, the fault of the physicians?

Not only are no efforts made three to four days after birth, but later, when the child is between three and six months old, breast-feeding is often stopped for no apparent cause, here again without examination of the milk to find out its composition. Would it not be more just to the infant first to try to help the mother so improve her supply of breast-milk that there may be enough for the child, for some months longer, at any rate?

Baginsky[3] states that any other food than woman's milk requires considerable work from the infant. Chapin[4] declares that "normal maternal milk supplies the necessary quantities of fat, proteids, carbohydrates, etc., for proper structural development and maintenance of the vital processes, in forms that automatically adapt themselves so as to develop the digestive functions of the growing animal." Rotch,[5] with interesting detail, gives the principles, diet and exercise chiefly, which produce variations in mothers' milk, basing his results on frequent examination of the breast-milk in question. Holt[6] also discusses the value of food, drink and exercise in bringing about changes in breast-milk. He lays stress on examinations of the mother's milk also. Griffith[7] says:

> The possibility of improving the quality or quantity of breast-milk must never be forgotten before weaning is advised. An alteration in the diet, in the quantity of liquids taken and in the amount of exercise employed will often attain the result desired.

Morse,[8] in a most interesting article, says:

> The nursing woman ought to lead her usual life and not be treated as an invalid. . . . She should take her usual food, but more of it. . . . She must have light and air and must not be shut up in the house. . . . The best method of increasing the quantity of breast milk is the use of the breasts. . . . Within reasonable limits, the more taken, the more there is produced. Other methods are entirely subordinate. Among them may be mentioned, first, improvement of the general condition; second, a liberal diet.

Jaschke,[9] in his excellent monograph on the importance of breast feeding in the struggle against infant mortality, ridicules any special article of diet or

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Holt, L. E.: Diseases of Infancy and Childhood, 1897, p. 126.
2. Rotch, T. M.: Pediatrics, 1901, p. 116.
3. Baginsky, A.: Berl. klin. Wchnschr., 1900, No. 17.
4. Chapin, H. D.: New York Med. Rec., Dec. 12, 1903.
5. Rotch, T. M.: Pediatrics, 1901, p. 141.
6. Holt, L. E.: Diseases of Infancy and Childhood, 1897, p. 161. xxviii, 271.
7. Griffith, J. P. Crozer: Am. Med., May 3, 1902.
8. Morse, J. L.: Phys. and Surg., March, 1907.
9. Jaschke, R. T.: Monatschr. f. Geburtsh. u. Gynaek., 1908,

drugs, referring to Finkler's list,[10] and states that the best galactagogue is the nursing infant. He insists only that the nursing mother be well nourished. Schlossmann[11] and Engel[12] believe that the nursing mother may eat whatever she pleases.

Notwithstanding these and other unquoted opinions, it has been my lot to find that much could be accomplished in every case by persuasion, encouragement, advice and perseverance, even though the mother dislikes the idea of nursing her child and decides not to do so. Later, when the baby is several months old and the mother believes her milk no longer to be as nourishing or as plentiful as it had formerly been, much can again be accomplished if directions are correctly carried out.

Old as is the recognition of the fact that every well woman ought to nurse her baby (and only recently Walcher[13] has shown that no actual diminution in the ability of women to nurse their offspring can be demonstrated anatomically) it was never so important as at present when the success following the use of cows' milk mixtures (and, unfortunately, the popularity of the proprietary infant foods) have made the use of the infants' bottle seem almost a necessity. That one or two bottles daily, given when the baby takes his nap, or to allow the mother time for fresh air and exercise, can do no harm has been shown by many careful observers, provided the mother follows other directions rigidly.

Since the appearance of Dr. Southworth's article[14] on this subject, in 1902, I have urged all those with whom I have come in contact, socially as well as professionally, to continue breast-feeding until the baby is at least eight or nine months old. In contrast to the subjects observed by many in cities, the mothers I have treated have been normal women or nearly so, and on this account, perhaps, my directions have resulted successfully.

During the last few months of pregnancy, not only should the nipples receive daily attention, but every pregnant woman should cultivate the excellent habit of drinking water. It is well to have a pitcher of drinking-water always near at hand so that she may drink frequently. She should learn to drink without discomfort three quarts or more every day. The value of large amounts of drinking-water during pregnancy has also been urged by Holloway[15] as tending to prevent the toxemias that so readily occur from retained products of metabolism. Other rules of decided importance during pregnancy are: exercise in the open air, a walk or drive, or in bad weather a walk on a piaza or in a room with windows open; sufficient sleep, not only eight to ten hours at night, but also a nap of two or three hours every afternoon; correct, wholesome, plain food and enough of it (red meats to be taken sparingly); and the regular daily evacuation of the bowels, brought about by regulating the food, water and exercise, although it is sometimes advisable to add some mineral water, besides.

After delivery it is most important that the mother take daily three or four quarts of water, some with meals and a great deal between meals. This is not difficult if the woman has grown accustomed to drinking large amounts of water daily during pregnancy. Tea and coffee should be absolutely prohibited during lactation. Next in importance should come the thin corn-meal gruel advocated so strongly by Dr. Southworth. This is easily made, boiling one or two tablespoonfuls of yellow corn-meal in a quart of water for five hours, in a double boiler, with the lid on. It may be flavored by putting in ten or fifteen large raisins, a little salt, wine or nutmeg. It is kept on ice and drunk between meals, poured on ice in a bowl or glass, at 10, 4 and bedtime. The taste is not bad and most women like it. For those few women who like milk and are used to drinking it, a quart or more may be allowed daily; but milk should never be urged on those who dislike it or believe that it disagrees with them. *In such cases cocoa prepared with milk may be substituted.*

In many women with a tendency to anemia during lactation, the use of one-third or one fourth of a bottle of brown stout (imported), not more, taken with the midday meal occasionally seems of value. Ale, beer and malt extracts are not good, as they tend to obesity, without affecting the milk or the general condition of the woman. In a few of these anemic mothers some iron preparation, such as the phosphates, glycerophosphates or hypophosphites, has seemed of decided benefit. As before delivery, exercise, fresh air, sufficient sleep, enough food, regular bowel movements and a routine existence are to be insisted on. It should not be overlooked, however, that an active cathartic will greatly, though temporarily, diminish the amount of milk secreted. Great stress must also be laid on the regular care of the breasts, washing them both before and after nursing.

Though Jaschke[16] says there is no absolute contraindication to nursing, most medical men prefer not to allow a mother with advanced tuberculosis to nurse her child; and other conditions in the mother may rarely exist which would make nursing injudicious for her. There is a group of nervous women found in cities especially in whom all efforts are apparently wasted, the women growing stout without any improvement in the milk-supply being noticeable. Dr. Southworth's suggestion[14] to give the child both breasts temporarily, alternating with one or two bottles a day, when the mother first begins treatment, will be of value in some serious cases. By this means the mother's supply of breast-milk may be saved.

My notes cover 73 cases, including private and hospital patients during six years. In 24 of these my directions were not followed, or they were carried out incorrectly or for only a short time. In 6 of these cases the mothers were neurotic and grew stouter without any noticeable improvement in the milk. The mothers have carried out directions in 49 cases and have been able to nurse their children to between six and eight months. Directions were given before the birth of the child in 21 cases; in 14 cases the infants were under three months of age when treatment of the mother began; in 9 cases they were from three to four months old; in 5 cases, over four months of age. In only 6 cases was one bottle allowed daily; in 2 cases two bottles were given daily.

At some time between six and eight months the great majority of mothers noticed that their babies cried more than formerly and they soon realized that this was due to hunger. When this occurred, in spite of having conscientiously carried out directions, weaning was first considered. By this time most babies were being nursed at 6, 9, 12, 3 and 6; or possibly at 6, 10, 2 and 6, with one night feeding. A cows' milk mixture was first substituted for the afternoon feeding, as most infants appear to take least at that feeding. The first mixture given was composed of 1 ounce of boiled water (or barley-water), 1 ounce of lime-water and 2 ounces of milk (4 per cent. certified, from which the upper 6 ounces from a quart bottle had previously been removed by dipper). After heating the mixture, it was in most cases given with a spoon; in a few cases, those used to bottles, the baby's bottle was again used. For colicky infants the bottle is to be preferred; and a hot-water bag may be applied to the abdomen during and after feeding. A few days later, when the infant learned to take the entire 4 ounces, the amount given was increased to 5 ounces; then gradually to 6, 7 and 8 ounces, still using one-half milk, with the upper 6 ounces dipped off a quart. By the time the baby took 6 or 8 ounces at each feeding, the milk mixture was substituted for the breast twice daily; in a few more days, for three feedings, and by the end of three weeks the infant was weaned. Then, instead of removing the upper 6 ounces from the quart, only 5 ounces were dipped off; later only 4 ounces.

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[10] Finkler: Zentralbl. f. allg. Gsndhtspflg., 1907.

[11] Schlossmann, A.: Arch. f. Kinderh., 1900, xxx.

[12] Engel, S.: Diseases of Children, by Pfaundler and Schlossmann, Am. trans., i, 351.

[13] Walcher: München. med. Wchnschr., 1908, p. 2440.

[14] Southworth, T. S.: The Improvement of Breast Milk and the Prolongation of Lactation, THE JOURNAL A. M. A., 1902, xxxix, 249.

[15] Holloway, T. C.: Kentucky Med. Jour., April, 1908.

[16] Jaschke, R. T.: Monatschr. f. Geburtsh. u. Gynäk., 1908, xxxiii, 191.

The baby has now learned to digest the proteid of cows' milk and is learning to tolerate the fat; the strength of the mixture is gradually raised, although it is unwise to exceed 6 ounces of 4 per cent. certified milk (still with the upper two ounces dipped off each quart bottle) in an 8-ounce mixture, 7 ounces in a 9-ounce mixture, or 8 ounces in a 10-ounce mixture, until the child is one year old. Then orange juice and a cereal, such as strained oatmeal, well cooked, may be begun; later, junket, custards, dry toast, soft-boiled egg, etc., may be added. Well-baked potato and baked apples are favorites with some babies.

While special stress has been laid on the feeding, ordinary hygiene should by no means be neglected. The child, as well as its mother, needs fresh air, baths, drinking-water, regular habits of sleep, defecation, etc.

The object of this paper has been simply to reiterate the immense importance of breast-feeding and to report my results, achieved by persuasion, advice, encouragement and perseverance in the overcoming of difficulties, few of which are found on investigation to be as real as young mothers think them. That this experience may help others to obtain like results is my hope, so that every woman may try, for a time at least, to nurse her offspring, an act which is sure to be followed by a generation of stronger individuals and by a great decrease in infant mortality.

118 South Twenty-second Street.

ABSTRACT OF DISCUSSION

Dr. H. M. McClanahan, Omaha: As the school question is of importance after the child is brought into the world, and reaches school age, this question is of importance in saving the child to enable it to live to school age. Recently I have been asking mothers why they weaned their babies, and when they weaned them. Sixty per cent. of the mothers replied that the family physician had told them to do so. Many weaned them within the first two weeks of life because the child cried. Without knowing why it cried it was put on the bottle. I am an advocate of mixed feeding rather than leaving the child without breast milk altogether. If a child is given the breast part of the time, I think the mother is entitled to give it the bottle a part of the time. Breast milk makes the baby more resistant to infections, but our knowledge of mixed milk makes it easier to have a baby partly on the breast and partly on the bottle. The mother should be taught that nothing but organic disease justifies a mother in weaning a baby. If necessary she may give it the bottle as a supplement to the breast feeding if the child does not get enough milk. In text-books on the diseases of children ten pages are given to the subject of artificial feeding and almost nothing to breast feeding and how it may be brought about. Frequently mothers will say to me: "I understand that it is just as well to feed the baby on the bottle." Recently I saw a baby on the fifth day of life. It had a temperature of 105 F. The mother was a primipara. She told me she was sorry she could not feed the baby. By keeping the baby persistently at the breast she is now able to nurse the baby. Those are the questions that lie at the very foundation of the supply of human beings. Seventy-three per cent. of the children in the large cities are foreign born and are nursed by their mothers.

Dr. J. P. Sedgwick, Minneapolis: It is gratifying to see that we are coming out of a state of pessimism in regard to mothers nursing their babies. I have kept a record of private cases I have had since I began practice, as to whether the mother nursed her child and, if she stopped, why, and when she stopped. Some of the answers are so ridiculous that it would surprise most of us if we kept such a record. In the first place, we are led to believe that it is very frequent that breast milk does not agree with the baby. That I believe is a rare condition. I think it is usually a quantitative question rather than a qualitative one. Let me recite one example. A baby had been taken from the breast and put on the bottle on the advice of a physician who had examined the mother's milk, reckoning the amount of cream and protein. The physician found 4 per cent. of protein and for that reason thought that the baby could not be kept at the breast. He got doubtful results when the baby was put on the bottle and very soon the baby and its mother came to me. I could see no reason why the child should not be nursed by its mother; I examined the milk and I got 1.4 per cent. protein in two samples, showing how much harm can be done by inaccurate examinations, and then basing our therapy on such examinations. I am so convinced that it is a general quantitative question that I have scales not only in my office, but other scales that are sent from house to house, allowing the mother to see for herself what the child gets. We should have very accurate data before we take a child from the breast.

Dr. L. Duncan Bulkley, New York: For years I have fought for mothers nursing their children. I have not used the scales and I have not analyzed the milk. I am an old-fashioned practitioner, but I am positive that attention to the mother has accomplished results that could not be secured otherwise. Over and over again a mother comes to me and tells me she can not nurse her child. I analyze the urine and examine the mother carefully, and find metabolic or other errors which I correct, and in nearly every instance the mother is given iron. In eczema in small infants I give the mother arsenic and iron and seldom give the child anything internally. Time and again people have spoken of the fact that when I stopped the mother from taking tea the child's eczema stopped. I have seen so many cases of eczema in children in which the mother was given stout, and in which the eczema was cured when the stout was stopped, that I can not help believing that the stout has something to do with the eruption. I believe mothers can be educated to drink milk, but I never give milk with the meals. The mother drinks the milk like water, one hour before her meals. I think the milk should be warm, so I commonly dilute it with one-third of boiling water. The mother's appetite is increased thereby, and the milk does not to my belief, go through the stomach in the usual way: I believe it is absorbed. My directions are that the moment the mother awakens in the morning she should drink eight ounces of milk, with one-third hot water, and that she repeat this one hour before each meal. She should let four or five hours pass after the ordinary meal before taking it. The idea is to supply the mother with milk which she gives the baby.

Dr. A. F. Furrer, Cleveland: The frequency with which the mother should nurse her baby is important. It is common experience that mothers nurse their babies too often. "Every time it cries" is the admission (during the day and all night long). At the Babies' Dispensary and Hospital in Cleveland, the four-hour intervals, after the German method, is in vogue and works very nicely. I believe that if we as physicians instruct the mothers to nurse *infrequently* more mothers would be willing to nurse their babies.

Dr. Charles Douglas, Detroit: A little confusion has arisen by not drawing the line between the normal child and a delicate child. Those of us who give most of our time to correcting the damaging results due to our feeding, realize that success depends on recognizing that the digestive power is only so great for each meal and we have to get in enough nutrition within twenty-four hours to meet the needs of the child. We must give the child at each feeding the amount it can digest perfectly and get a proper stool. Then when it becomes hungry we must feed it again regardless of the time since last meal. To be successful we must recognize that fact. I did not notice whether or not the essayist had made any provision for the dilution of the food. I am in the habit of weaning children by gradually introducing a starchy diet. Dr. Ostheimer's plan would certainly appeal to any one doing this work.

Dr. John Lovett Morse, Boston: Dr. Ostheimer has read his paper before the wrong audience. He should have read it before obstetricians or nurses. The pediatrists are now all awake to the necessity for breast feeding.

Dr. Frank P. Gengenbach, Denver: Every day, every week, every month, that the child receives breast milk increases its resistance in the battle for existence which no other feeding method makes possible. This is the teaching of Salge, the professor of pediatrics at Göttingen. The Germans try in every way to give breast milk. They would no more have an infant hospital without wet nurses than they would think of having such a hospital without the infants themselves, because they have so many babies who can not be fed in any other way. Some babies will only get along with bottle feeding if that is supplemented with breast feeding, and others can only get along on the breast. The Germans recognize only one contraindication to breast feeding and that is tuberculosis on the part of the mother. Even in cases of mastitis they do not consider it a contraindication, even if a slight amount of pus is present. They believe that so long as the mucous membrane of the throat and mouth are intact there is no danger of infection. For that reason they object to mouth washing because they believe more harm results from the abrading of the mucous membrane than good can come of the mouth washing.

Dr. Thomas S. Southworth, New York: In the diet of the nursing mother I believe that milk as a milk maker stands first. Second to that, I place cornmeal gruel. I do not use the latter in such large quantities as formerly. I find that about four tumblers of an equal mixture of gruel and milk are enough, giving the rest of a quart of milk at other times. This gruel should be cooked long to take off the raw taste, and salted to prevent a flat taste; then it should be mixed with milk and it is for most people fairly palatable. When the supply of breast milk is small and weighing shows that the child does not receive enough milk to satisfy it, much good is done by nursing it each time at both breasts. Again, if the fat is high there is less fat from the first milk of breasts than if one breast is stripped. When the number of breast feedings and supplementary feedings are equal, it is imperative that each nursing be from both breasts or else the amount of milk decreases. I am not in accord with one writer who claims that the giving of one or two supplementary feedings to a nursing infant involves a diminution of the breast milk. On the contrary, I think that it often tends to build up the breast milk rather than to decrease it.

Dr. Maurice Ostheimer, Philadelphia: I appreciate Dr. Morse's suggestion, for I think the obstetricians are largely to blame. While I realize the value of milk as a food, there is no doubt in my mind that it will cause indigestion in many women, even a very little of it. I have never tried Dr. Bulkley's method, but will do so.

Playground Space.—The London school authorities have determined that fifty square feet is the minimum playground space for each child.—*Hygiene and Physical Education.*

MIDDLE MILK MIXTURES *

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NEW YORK CITY

It is some years since it was shown that when milk is allowed to stand the bacteria are carried upward with the fat globules so that the cream layer contains a far greater number of micro-organisms than the underlying skim milk.

This teaching has been corroborated many times, although it has been frequently forgotten in practice and in experiment. In a study published about one year ago,[1] from the Research Laboratory of the New York Board of Health, I went somewhat deeper into this question, in which by chance I had become interested. As some of those present are acquainted with this investigation, I shall not review the experiments which I undertook in this work. Briefly stated, they resulted in establishing a fact which had not, I believe, been previously noted, namely, that the bacteria which the cream is known to harbor, are not homogeneously distributed throughout its depth, but are present in far greater numbers in the surface cream than in its lower strata. In other words, it is incorrect to regard the cream as a unit when we are considering its bacterial content. It was frequently evident from a glance at the Petri plates that the uppermost two ounces of the bottle contained decidedly more bacteria per cubic centimeter than the succeeding two ounces, and these, in turn, more than the lowest portion of the cream or milk (Table 1). This was true even when the milk was simply poured from the bottle. Tubercle bacilli also were shown to be carried to the surface, for the animals inoculated with the upper two ounces of cream developed tuberculosis oftener than those inoculated with the lower ounces. As typhoid fever of late has been frequently traced to the milk supply, I took the opportunity recently of inoculating with typhoid bacilli two bottles of a certified milk, which at times is almost sterile, and, after allowing them to stand over night, made bacterial counts from the various layers. As was to be expected the result was the same; the greatest number of typhoid bacilli were found in the upper two ounces of the cream (Table 2). This result preaches its own remedy.

TABLE 1.—Bacteria Per c.c. in Layers of Bottled Milk.

1st 2oz.	2nd 2oz.	Remainder.
93,500	49,000	
86,500	14,000	
235,000	96,000	40,000
115,000	36,000	6,000
102,000	57,000	
1,383,000		160,000

TABLE 2.—Typhoid Bacteria Per c.c. in Inoculated Bottled Milk

1st 2oz.	2nd 2oz.	Remainder.
320,000	103,000	43,000
1,200,000	395,000	155,000

In the paper to which I have referred I suggested a way of taking advantage of this physical principle and adapting it to the practices of infant-feeding. This new modification of preparing milk was not complex and did not clash with the accepted method of estimating top-milk mixtures, for, after discarding the upper two ounces of cream, it was ascertained by quantitative analyses how many ounces should be removed to obtain 12 per cent., 10 per cent., or 7 per cent. cream; in other words, the different strengths of cream which are used as a basis for preparing top-milk mixtures.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] The Distribution of Bacteria in Bottled Milk, and its application to Infant Feeding. Arch. Pediat., August, 1908.

Nevertheless, in spite of its basis of scientific fact and apparent practicability, this partially skimmed milk which I now term "middle milk" has, so far as I am aware, found no acceptance. In the recent literature are found references to the usual top-milk mixtures as frequently as before, some writers urging the use of the upper two or four ounces of the gravity cream for milk mixtures, or even the use of the uppermost cream from two or more bottles. No argument against the theoretical or practical soundness of my suggestion has come to my notice. As I have found this modification of top-milk feeding practicable in a clinical experience extending now over a year, I thought it excusable to point out in a few words that middle milk is not merely an interesting laboratory suggestion, but that it permits of a simple and practical modification of top milk feeding, and one which possesses decided advantages.[2]

I have used the middle-milk mixtures mainly in the dispensary, prescribing them to women who are certainly not endowed with more than average intelligence. These mothers were given the following directions: Remove the upper two ounces of cream and keep it for table use. Then dip off the next eight ounces of milk. (This furnishes them with a standard 10 per cent. cream.) They are then directed to dilute a certain number of ounces of this cream with water or barley water according to the age or condition of the infant. If a 12 per cent. cream is preferred as a basis, 7 instead of 8 ounces of middle milk, is ordered removed; if a 7 per cent. cream is desired, 12 ounces are removed. It is certainly a very simple matter to carry out these directions. The only possible disadvantage is that there are fewer ounces of cream as a basis than in top-milk mixtures; for example, whereas we are able to obtain 16 ounces of 7 per cent. top milk from the bottle, we can have only 12 ounces of middle milk. The mothers understood the directions readily, quite as readily as they did the formulas based on top milk which I had been in the habit of prescribing.

We are all aiming at supplying better milk for the infants of the poor, and are striving to make it possible to obtain, especially during the warm weather, a cheap milk with a low bacterial count. Here, then, is a supplementary method by which the count may be materially reduced without in any way affecting the natural properties of the milk.

We can not hope to obtain clean "middle milk" from dirty whole milk, but it is certainly true that the more contaminated the milk the more is to be gained by removing the upper two ounces. And, on the contrary, the better the milk, that is to say the more nearly it approaches the standard of certified milk, the less is to be accomplished by this process. At present there can be no question but that comparatively little of the milk fed to the infants of the large cities approaches this latter standard. If the milk is contaminated by pathogenic bacteria, for instance, by tubercle or typhoid bacilli, the dose of these bacteria fed in the "middle milk" will be much less than that in the top milk.

I realize that many here have made use of middle milk, although they have not used middle-milk mixtures, that they have, for perhaps years, prescribed the removal of the upper ounces of the cream in order to reduce the fat content of the milk. In this way they have unconsciously killed two birds with one stone, and the fact that the modification which I suggest chimes well with the teaching against high fats should argue strongly in its favor. Especially is this so as regards feeding in warm weather, when bacterial and fat intoxications woefully combine to increase the infant mortality.

I do not urge this modification as a method of purifying dirty milk, as a substitute for pasteurization or sterilization, but wish merely to call the attention of those who prescribe cream dilutions to the fact that "middle milk," that is bottled milk deprived of its upper two ounces, not only contains fewer bacteria than top milk, but has been found of practical value in the feeding of infants.

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ABSTRACT OF DISCUSSION

Dr. Frank S. Churchill, Chicago: I take it that the point in feeding babies is first of all to feed them clean milk and then to feed them percentages that are adapted to the child. These two objects can be better attained through the milk laboratory. It is true that the milk laboratory is an expensive thing, but in all the larger cities we have charitable milk laboratories where such milk can be obtained at a very small cost and in case of need it can be obtained free. We can send the prescription to the laboratory and give directions as to the exact amount to be fed to the child. The laboratory at Chicago is inspected and subjected to bacteriologic investigation and we feel that we can depend on the milk from this laboratory.

Dr. L. T. Royster, Norfolk, Va.: The feeding of babies, especially babies of the poor, resolves itself into getting clean milk. In Norfolk we have greatly lowered the mortality by getting clean milk. If we can get a certified milk from a laboratory we are doing a wise thing. We can also give to the poor prepared milk with great benefit, but with an intelligent mother handling milk that is delivered cool from the dairy and kept clean at home we may also get excellent results. In reducing the bacteria to the minimum Dr. Hess's method is a very good one.

Dr. Frank W. Pinneo, Newark, N. J.: Clean milk would obviate the necessity for discarding any part of it. The investigations of Dr. Hess are interesting and commendable, but as we can not remove all the bacteria with the upper two ounces of cream why not strive for a still better product—initially clean milk. In Essex County, N. J.—the cradle of certified milk—we have such a product, and where you can have milk that is so nearly free from bacteria (even in the upper two ounces) it will not be necessary to employ the method of Dr. Hess.

Dr. J. J. Thomas, Cleveland: Does Dr. Hess consider the germs themselves as a cause of the summer diarrheas? If so, the removal of the germs by this method would answer the purpose, but, according to recent investigations by Czerny, the summer diarrheas are caused by the acids produced by bacteria acting on the fat or sugar. In that case the harm has already been done and the removal of the upper layer of cream will have no effect at all. It is time for us to wake up to the point of proving or disproving that the condition is due to the germs. The thing of greatest importance is to keep out the germs, but it is a question in many cases of doing the best we can with poor milk. It seems to me that when the laboratory milk is of doubtful quality and we have certified milk, it is better to discard the laboratory milk and to depend on the certified milk. Owing to the pressure brought to bear in Cleveland, certified milk is now being used in modifications, but Cleveland is only one of the two cities in the country where this is done.

Dr. Alfred F. Hess, New York: No doubt it would be better if all the children and infants of the poor could get their milk from laboratories, but I know that in New York most of the babies treated in the dispensary do not get their milk from the laboratory, but are given loose milk, or bottle milk. If we could induce these people to get it from the philanthropic institutions it would be better, but they do not get it there and so we must deal with conditions as we find them. These counts were made from ordinary 8 cent bottle milk, the ordinary cheap milk. I ordered analyses to be made so that I would know just how much to use in order to get a 7 per cent., 10 per cent., and 12 per cent. cream. I do not think Dr. Pinneo quotes the German authors quite correctly in the statement that all the trouble is due to the fat. I believe they admit that there is also some trouble due to the bacteria. There is no reason why this middle milk should not be pasteurized afterward, one will have fewer dead bacteria. Whether the bacteria do harm or whether only the chemical qualities do harm, we know that tubercle bacilli do harm and that the typhoid bacilli do harm and these two germs are found largely in the upper milk, and if we could avoid these we could avoid many cases of illness.

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[2] Since this article was written, a review of this subject by Dr. John F. Anderson, entitled "The Relative Proportion of Bacteria in Top Milk and Bottom Milk and its Bearing on Infant-Feeding" has appeared in the Journal of Infectious Diseases. I was pleased to find after the lapse of a year a complete confirmation of my laboratory experiments, as these investigations are the structure on which I base the desirability of using middle milk. Dr. Anderson also believes that question is of importance in infant feeding and concludes that "the preponderance of bacteria in top milk may explain why infants sometimes do not thrive on milk made from top milk."

THE ETIOLOGY AND TREATMENT OF THE SO-CALLED SUMMER DIARRHEA IN INFANTS *

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Six or seven years ago there were carried out under the supervision of the Rockefeller Institute extensive bacteriologic examinations of the stools of infants suffering from summer diarrhea, with especial regard to the presence of the *B. dysentericus*.[1] Not only the Rockefeller Institute, but many hospitals and laboratories undertook at the same time the same careful research. The results of these researches seemed at first to throw some light on the etiology of this affection. Not only was the *B. dysentericus* (usually of the Flexner type) found frequently, but in some of the cases agglutinins were found in the blood. Soon after these researches in the east, Weaver[2] published a series of examinations by which he was able to show that the dysentery bacillus was to be found in the stools of infants suffering with summer diarrhea in only 25 per cent. of the cases. About the same time Dr. J. S. Welch and myself[3] examined the stools of 17 children with diarrhea in Cook County Hospital, with the result that only one case showed the Flexner bacillus; but we were able to isolate other bacilli, which with the variations from the Shiga-Flexner type recorded by other observers served as links in a chain connecting the *B. coli communis* to the *B. dysentericus*. We came to the conclusion that true dysentery, if such existed in infants, was a relatively rare disease in Chicago.

There are many reasons for believing that *B. dysentericus* is not etiologically connected with a large percentage of the diarrheas in infants. In the first place, the cases which showed the dysentery bacillus in the stools differed clinically in no way from those cases in which no dysentery bacilli were found. In the second place, the dysentery bacilli were usually few in number and extremely hard to find. In the third place, agglutinins were by no means constantly present and, so far as could be ascertained, the antidysenteric serum which has excellent results in the true dysentery in the adult as found, for instance, in Japan, seemed to have no effect whatever on the condition of the infants affected. The dysentery bacillus has never been cultivated from the blood of these infants nor has it ever been found outside the human body (except in the laboratory animals).

I think it is safe to say that unless more certain proof is brought that the *B. dysentericus* is etiologically connected with summer diarrhea we may regard it as at least an open question with the burden of proof resting with those who support the theory, for such it is.

Escherich[4] and very recently Jehle[5] have described a streptococcus enteritis with a definite clinical history and the presence of such complications as nephritis, peritonitis, etc. Jehle regards a given case of diarrhea as due to the streptococcus when that organism is found in great numbers in the stools at the very onset of the attack. Evidently the condition is a streptococcemia with the intestinal canal as its point of entrance.

Escherich[6] has described a so-called epidemic of gastroenteritis occurring in a home for nurslings in which the *B. acidophilus* was found in the stools, and Finkelstein[7] one in which the *Bacillus enteritidis* was found. That there was any connection etiologically between the *B. acidophilus* and the diarrhea was not definitely proved. Cooley,[8] of Detroit, has recently described an epidemic in which the *B. pyocyaneus* was found in the stools.

Many years ago Escherich[9] advanced the theory that the *B. coli communis* suddenly became more virulent and either affected the gastrointestinal canal itself or produced toxins which caused the disturbance. Vaughan[10] is the only one who has been able to produce a toxin from the colon bacillus, and his conditions varied so greatly from those which we encounter in the infant that it is fair to assume that no such toxins are formed by the colon bacillus in the intestinal tract of the infant.

If we stop to consider the clinical picture which the ordinary summer diarrhea presents, we will see that there are present many things which are not compatible with the theory that this is due to infection of the intestinal wall. Usually, although the onset apparently is very sudden, still if we inquire more closely we will find that there have been present for days, weeks and even months, symptoms which point more or less directly to derangement of the gastrointestinal functions and the normal metabolism of the child. Why should we resort to infection to explain a condition which is more easily explained by a graver dietetic error of the same sort or a continuation of the same error past the point of tolerance? But the onset is not so significant as the course. If we take all food from a child having an acute attack of summer diarrhea and give in its place only water, perhaps sweetened with saccharin (not sugar), and containing a little barley or tea, in from 24 to 48 hours the temperature returns to normal, or almost normal, and the child's general condition becomes very much better, so much better, in fact, that the mother frequently regards it as well. To me it is not conceivable that the infection of such a long tube as the intestinal canal could be so readily and easily removed.

At present it seems to me that the infectious nature of summer diarrhea has not been proved: in fact, quite the contrary, and that we must look elsewhere for a satisfactory explanation of conditions as we find them.

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* Read before the Douglas Park Branch of the Chicago Medical Society, May 3, 1909.

1. Rep. of Rockefeller Inst., i, 1903.
2. Jour. Inf. Dis., 1905, ii, 70-96.
3. Am. Med., 1905, ix, 942-945.
4. Wien. klin. Wchnschr., 1897, x, 917-920; Jahrb. f. Kinderh., 1899, xlix, 137.
5. Jahrb. f. Kinderh., 1907, lxv, 40.
6. Jahrb. f. Kinderh., 1900, lii, 1.
7. Deutsch. med. Wchnschr, 1896, xxii, 608, 627.
8. THE JOURNAL A. M. A., Feb. 22, 1908, 607.
9. Verhandl. des 17 Congresses für innere Medicin, 1899, 425.
10. Ztschr. f. Physiol. u. Chem., 1886, x, 146.

Within the past year Finkelstein[11] has described a disorder of nutrition which he designates "metabolic intoxication." The symptoms of this affection are the same as those of summer diarrhea as we commonly encounter it. Finkelstein has proved that this entity is an intoxication metabolic in nature caused primarily by the inability of the organism to assimilate the sugar properly, a condition to which too much fat in the food predisposes. He has proved that after a hunger diet the pure casein of cow's milk can be taken care of, and that sugar as well as fat in any appreciable quantities causes return of the symptoms. His argument in favor of this being due to the food is that on removal of food the symptoms of intoxication quickly disappear. In this condition we find a leucocytosis and albumin, sugar (lactose) and casts in the urine. The breathing is deep and rapid. Meyer,[12] who has worked on the metabolism of metabolic intoxication, believes it to be an acidosis. He thinks that the loss of weight for which the diarrhea does not give us sufficient explanation is due to the escape of moisture from the lungs.

Czerny and Keller,[13] while agreeing with Finkelstein to a degree, suggest that we may have a "toxicosis" due to the decomposition of the food by bacteria, either before ingestion or in the gastrointestinal canal. Although offering no proofs, they are inclined to the opinion that the toxic products are acids split off from the sugar or the fat. Like Finkelstein, in no case have they seen any reason to believe that the casein of cow's milk caused any disturbance in these cases. Czerny and Keller state positively that they do not think that there is such a thing as infection of the gastrointestinal wall, except in the various diseases of the new-born, hemorrhagic diseases, sclerema, etc.

If we are to accept the ideas of Finkelstein or of Czerny and Keller, or both, we must answer several questions. The first one of these is: Can we explain all the clinical findings by these theories? The only symptoms about which there would likely be much question are fever and the urinary findings. That fever is not always due to bacteria and their toxins is proved by its presence in such conditions as uremia, a condition marked by a profound disturbance of metabolism.[14] The presence of sugar in the urine indicates at least a disturbance of absorption and probably also of metabolism. As to the presence of albumin and casts, recently we have found them so frequently and in such a variety of diseases that their presence has lost much of its former significance. In nearly any severe disturbance we would not be surprised to find them, and hence any disturbance of metabolism so severe as to allow lactose to pass into the urine would certainly give rise to substances sufficiently irritating to the kidney to account for the presence of albumin and casts in the urine.

The second question is: Can we account for the pathologic findings on these theories? We can divide the pathology into the lesions of the intestinal wall and the lesions of the other organs. The lesion usually encountered in the intestinal wall is congestion; this may be followed by round-cell infiltration and even by ulceration with infection of the lymphatic tissue. The presence of toxins, whether metabolic or alimentary in origin, would be sufficient to cause a congestion, and if more irritating an infiltration. We have so long been accustomed to regard bacteria as the cause of intestinal ulceration that we have forgotten that when we speak of bacteria acting in this way we mean their toxins. That chemical poisons produced in the body, whether by disturbance of metabolism and excretion through the intestinal wall or by the decomposition of the food, can cause ulcer formation in the intestine, would seem more than probable. Any involvement of the lymphatic tissue must be regarded as due to secondary bacterial invasion. The finding of bacteria in the epithelial cells of the intestinal tract is of little significance, since even a half-hour after death they are often found in cases in which no pathologic condition of the intestine is evident. That they should be found in the epithelial cells of the feces is not to be wondered at, for these in most cases have become detached much earlier than one-half hour previous to defecation.

The only organ outside the intestinal tract involved in most cases is the liver. One of the chief functions of the liver is to arrest poisons on their way to the general circulation. In a condition such as this, in which poisons are present in large amounts, we would expect to find the liver swollen and showing some degeneration of the cells. This, in fact, is the condition in which we find this organ. But some one may ask if this condition is metabolic in nature why does it occur more frequently in summer? To answer this question we must take into consideration three facts: first, in proportion to its weight the skin surface of the infant is much greater than that of the adult; second, a small baby is usually much too warmly clothed, and third, in the hot weather less food is required than in colder months. The first fact shows that the child is more susceptible to heat because of a relatively greater body surface. In addition, the warm clothing prevents the proper excretion through the skin. A mother practically never thinks that a child should have less food during hot weather, and hence the child is kept on the same high diet. The result is that a disturbance of metabolism occurs because of excessive food supply and defective excretion through the skin. On the other hand, if we agree with Czerny and Keller, the whole can be explained by a decomposition of the milk, a thing which is certainly most apt to occur in the summer months.

When, therefore, we stop to consider the question of the etiology of summer diarrhea, we come to the conclusion that, though infection of the intestinal wall probably takes place in some cases, it is not the usual cause of a summer diarrhea in infants, but that this affection is, as a rule, due to a disturbance of metabolism or decomposition of the food.

Having arrived at this conclusion, we can now intelligently turn to the treatment. If we are dealing with a condition which directly or indirectly is due to the food ingested, the first indication is to stop all food. But this is not sufficient. Meyer has shown that in the acute attack the loss of weight, which at times is relatively very great, is due to the loss of fluid in the form of watery solution of the body salts. This takes place primarily from the intestine in the form of diarrhea, but the amount lost in this way will not account for the total loss. Meyer suggests that in all probability the loss takes place in large part through the lungs and that this excretion is evidenced through the rapid deep breathing. Be this as it may, the indication is present for the supply of fluid to the system. This we accomplish by giving barley water or weak tea. However, it is occasionally impossible to give these fluids by mouth because of the comatose condition or extreme asthenia of the patient, and, since it is imperative that fluid be given to these babies, at times it is well to resort to a continuous enema, or even to subcutaneous administration of normal salt solution.

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[11] Jahrb. f. Kinderh., 1907, lxv, 1, 263; lxvi, 1, 521.

[12] Jahrb. f. Kinderh., 1907, lxv, 585.

[13] Des Kindes Ernährung, Ernährungsstörungen und Ernährungstherapie. Leipzig. u. Wein., 1909, ii, 134.

[14] Since this paper was written Rosenstern has published some interesting experiments in which he shows that giving even a 1 per cent. sodium chlorid solution to a child suffering from a nutritional disturbance will not only raise the temperature but cause a leucocytosis. Monatschr. f. Kinderh., 1909, viii, 9-23.

The starvation diet is continued for from 24 to 48 hours. At the end of this time all symptoms have usually disappeared; even if they have not, nothing can be accomplished by a continuance of this treatment, and food in some form should be administered. For the past two years, I have used skimmed milk as the first food to be given these children and have never had cause to regret my action. I have usually brought this to a boil before giving it, because in this condition it seems to be more readily digested. This kills any bacteria which might act on the milk sugar and which are present in skimmed milk in large quantities. The skimmed milk is given to the amount of from 1¼ to 1½ ounces to the pound weight of the child in 24 hours, and diluted so as to afford enough in quantity to each feeding. The food is sweetened with saccharin when necessary and given at four-hour intervals. This, of course, is a temporary measure and as rapidly as possible milk sugar should be added and the skimmed milk replaced with whole milk. In this no rule can guide us except the condition of the child, and hence the gradual resumption of sufficient food must depend on the judgment of the physician. As a rule, we must be very cautious or there will be a return of the affection. In this method of treating this intoxication one of the most annoying features is the tendency to constipation when the skimmed milk is being replaced with whole milk. At this time the addition of malt to the food frequently brings relief.

Some symptoms may prove troublesome. The vomiting often ceases after the starvation period, especially if a four-hour interval is strictly observed. Sometimes it is necessary to take more active measures, such as stomach washing. The use of such medicaments as bismuth, it seems to me, is limited to such cases as do not respond to the other forms of treatment, and they are not common. The diarrhea will nearly always take care of itself. I sometimes employ colonic flushings, but more with the idea of reducing the temperature than of cleaning out the bowel. The reduction of the temperature can be accomplished usually by the measures previously suggested, but hydrotherapy is often of great advantage and when delirium is present antipyrin acts very favorably, not only in controlling the delirium, but also in reducing the temperature. Another distressing feature is distention. This is present usually only in the more protracted cases and is due to a circulatory disturbance of the intestine whose exact mode of action we do not know. For the temporary relief of this condition the introduction of a tube into the rectum, the other end of which is placed in a vessel containing warm water, frequently brings relief. We may also use colonic flushings and hot external applications to the abdomen even in the form of turpentine stupes. Collapse can best be combated by mustard packs followed by saline infusion or continuous saline enema.

I have purposely made no mention of the use of calomel or intestinal antiseptics. I have always felt that if we can obtain results in these infants without the use of drugs it is well to do so, and the treatment outlined will do what we desire. I feel that the use of calomel has been very much abused. It is conceivable that by further irritating an already irritated bowel it may do distinct harm and its qualities as an intestinal antiseptic are minimum. As to intestinal antiseptics in general, I can not see that their use is in any way indicated.

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Clinical Notes

CALCIUM SALTS IN THE TREATMENT OF EPILEPSY

WITH REPORT OF THE FIRST CASE

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DETROIT

With a large experience in the study and treatment of epilepsy, such as was afforded by my seven years' sojourn in the laboratory and wards of the Ohio Hospital for Epileptics, it is natural that I should be most conservative in expressing an opinion in favor of a new method of treating this malady. More particularly should I be reluctant about mentioning the seemingly favorable results that accrued with but a small number of cases. It was considerations of this nature that restrained me from putting on record the really extraordinary success that followed my first trial of the remedial effect of a calcium salt in epilepsy, and my avowed policy of postponement for further and more extensive corroboration of that success would not now be broken except for the appearance of an article from a physician in asylum practice,[1] who reports what he believes to be the first instance in which calcium lactate has been used for treating epilepsy. Alike to supplement the favorable record published by Dr. Littlejohn, who shows by tabular exhibits the suppression in two patients of epileptic attacks on the administration of calcium lactate over a period of three or four months, and to claim such credit as may be due from the standpoint of originality and historic priority, I herewith present a narrative of the first case of epilepsy in which I employed a calcium salt, together with the events and experiments which led me to the trial of this particular medication.

HISTORY OF CASE

Patient.—W. T. H., was brought to me for treatment in April, 1906, when he was 4 years and 4 months old.

Family History.—The child's parents were living and in good health; an older brother and a younger sister were free from neurotic disease. There was no record of epilepsy in the family, which, on the mother's side, was prominent in social and financial circles. The father was a well-educated, retired physician.

Personal History.—As an infant the patient was remarkable for his uneventful progress and perfect physical and mental development, which was the particular pride of a well-known pediatrist who supervised this period. A month after his third birthday the first manifestation of nervous disorder was noticed, and after a series of consultations between several general physicians and specialists a diagnosis of *petit mal* was reached and treatment with sodium bromid instituted. Occasional *petit mal* followed, and eight months after the first attack the primary severe *grand mal* occurred.

Frequency of Attacks.—By January, 1906, the epileptic seizures had become fully established, and the nurse, who gave unremitting care to the child, recorded the number and classified them as "light," "hard," and "convulsions," by which were meant *petit mal* (momentary loss of consciousness without fall), *petit mal* (with fall but no marked convulsions), and *grand mal* with all the events of a particularly severe major epileptic attack. In January there was a total of 844 attacks—401 "light," 424 "hard," and 19 "convulsions." For the following months to the time I finally had withdrawn the bromid by gradual reduction the total monthly number of attacks varied from 530 to 1,012, the ratio of the three varieties being about as above indicated. Following the withdrawal of the bromid the usual change from numerous light to fewer severe attacks took place as shown by a monthly total of 35 to 118, and of these *grand mal* seizures numbered 34 to 73 a month. June 3, 1907, the treatment under special consideration was begun, and the record shows 18 attacks, all *grand mal*, for this month, none for July, 72 *grand mal* in August, 6 in September, and from Sept. 7, 1907, to the present writing, June 30, 1909, *no further epileptic attacks.*

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[1] Littlejohn, A. R.: Calcium Lactate in the Treatment of Epilepsy, The Lancet, May 15, 1909, p. 1382.

Mental Condition.—The normal mental growth at the outset of the epilepsy ceased abruptly, and retrogression began which, when I first saw the patient, had reached the stage of a low-grade epileptic imbecility. After the bromid was stopped the hoped-for mental improvement did not follow, and it was not until after all attacks had ceased with the inauguration of the new treatment that a gradual clearing of the mind was observed, and this unclouding is still going forward to a degre most striking after the apparently hopeless state that once existed. In fact, the child seems to have suffered a mental non-existence for the two years and eight months of the epilepsy, and, with the suppression of the neurosis, to have resumed his mental growth from the time when the attacks began.

Previous Treatment.—The child was placed in the hands of good physicians, to whose aid was brought the advice of several noted specialists from two of our largest metropolitan centers. Aside from such general dietetic and hygienic precautions as are usually advised, bromids were employed, and with the increasing number of seizures, pushed in dosage. An operation on the cranium based on the theory of localized pressure was at one time considered but not undertaken.

Personal Treatment.—When I assumed charge of the case my announced plan was to attempt the withdrawal of bromids and to correct any possible source of reflex irritation. In the course of an examination of the digestive apparatus by a well-known gastroenterologist subnitrate of bismuth was administered preliminary to a skiagraph, and with an apparent reduction in the number of attacks following it, this drug was employed for some months without benefit. Finding that no special attention had been paid to the eyes, I advised the services of an expert refractionist, who found evidence of refractive anomaly and instituted treatment first by atropin-relaxation of the accommodation for a period, after which the compound hyperopic astigmatism was corrected. It was at the same time that the reduction of bromid had reached the end, and the resulting change from very numerous *petit mal* to a lessened total, but an increased number of *grand mal* followed. Some of the *grand mal* now came in series, never, however, reaching a full *status epilepticus.* I was with the patient during one of these series and witnessed *grand mal* as severe as any that had ever come under my notice in a large institutional experience.

Special Treatment.—Such was the condition of the patient when he came to Detroit for another of the several periods to allow of my personal observation. During March, April and May the lad had frequent nose-bleed following the *grand mal* cycles, and the nurse claimed she could detect the odor of blood on the breath during a convulsion and prior to the onset of the visible hemorrhage. I was at this time actively engaged in the practice of therapeutic immunization where the problem of blood coagulability presented itself, and I had employed Wright's method of measuring the time of blood coagulation, as well as his plan of using calcium salts to fortify a defective coagulability. Accordingly, when my attention was arrested by the reports about the epistaxis, I made the first blood-clotting test June 2, 1907, finding that the patient's blood failed to clot in 4 minutes, while a control blood under the same conditions firmly coagulated in 1½ minutes. The following day I began the administration of calcium lactate in doses of 7 to 10 grains dissolved in hot water and added to milk, three times a day. This medication has been continued with no change except occasionally reducing to one or two doses daily, to the present time. There has been no evidence of a harmful effect from the drug during this prolonged administration. Under its influence the blood-clotting time reached 2½ minutes by June 19, 1¾ minutes by July 6, and on numerous tests since, I have not found it to exceed 2 minutes, though rarely attaining the normal minimum of 1½ minutes. Since the cessation of the epilepsy three months after commencing the calcium lactate the child had occasional nasal hemorrhages, apparently related to periods of lowered coagulability not entirely brought to normal by the calcium salt. No lesion or abnormality has been found in the nose to explain the epistaxis.

RATIONALE OF TREATMENT

It was solely on the indication afforded by the hemorrhagic tendency in my first patient that I was led, after verifying by laboratory tests a tardy blood coagulability, to use the calcium salts in epilepsy, with the happy result just described. At the time I administered it MacCallum's observations on calcium metabolism as related to parathyroid intoxication and to tetany had not been published, nor had Carle's paper appeared on calcium chlorid in therapeutics,[2] with its recommendation for the use of the drug to allay nervous irritability in tetany, laryngismus stridulus, and "convulsions."

Incomplete observations on several additional cases of epilepsy treated with calcium lactate tend to confirm the favorable results obtained with my first case, and now that Littlejohn[1] has recorded the beneficial outcome in his early tests I shall be encouraged to prosecute further therapeutic experiments, for which I hope to have the opportunity through the courtesy of the authorities of the Ohio Hospital for Epileptics.

DERMATITIS FROM HAIR DYE

ANOTHER CASE OF POISONING FROM MRS. POTTER'S WALNUT JUICE HAIR STAIN

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PITTSBURG, PA.

History.—On June 23, 1909, I was called to see a woman who gave a history of having an eruption on the face which first appeared four weeks previously, subsided somewhat in two weeks and then recurred. The burning and itching were so intense that the patient could not sleep and nothing prescribed by the two physicians who had her in charge gave her any relief.

Examination.—Her face, neck and part of her shoulders were red and swollen and the area involved covered by numerous minute vesicles all in the same stage of development. While observing the patient I noticed that she had a habit of placing the palms of both hands on her hair and then pulling them down over her face. This suggested the possibility of the irritant being a hair-lotion or dye. Questioning her along this line, I elicited the information that she had been using "Mrs. Potter's Walnut Juice Hair Stain," having made two applications—the first one shortly before the first appearance of the eruption, and the second application two weeks later, as it was not suspected that the hair stain had anything to do with the eruption.

Diagnosis.—This history convinced me that the trouble was a dermatitis due to the use of the hair stain, as I had read the reports of the other cases published in THE JOURNAL.[1]

Treatment.—I advised her to keep her hands off her hair and prescribed the liquor alumini acetatis, N.F., diluted one to three with water, applied on compresses, which gave her immediate relief. The itching stopped and the swelling subsided so that three days later her face appeared normal except for a slight desquamation.

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2. Jour. de Méd. de Bordeaux, 1907, xxxvii, 472.

3. This makes the fifth case recorded in THE JOURNAL. The other cases appeared in the issues of Feb. 13, 1909; March 6, 1909, and two in the issue of April 3, 1909.

As this stain evidently has a large sale, as it is extensively advertised in the magazines and daily papers, cases of dermatitis from its use must be more frequent than the cases reported show. One fact that is liable to mislead the physician is that on account of the scalp being less sensitive to irritants than the skin of the face the scalp is not involved and the connection between an eruption on the face and the application of a dye to the hair is overlooked. The use of hair dyes and face lotions is becoming so common that we must consider them as possible causative factors in any eruption about the face, neck and scalp that we can not class as one of the recognized diseases.

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AN EPIDEMIC OF EMPYEMA

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NORBORNE, MO.

The following experience seems sufficiently remarkable to be worth reporting. The cases mentioned all occurred in my practice during the six months from Dec. 1, 1908, to June 1, 1909, in a rural community having a radius of less than four miles, with the center about seven miles northwest of Norborne, Mo.

I attended in this community six cases of frank lobar pneumonia and eight cases which I diagnosed pleuropneumonia. These latter failed to show clear physical signs of consolidation, the clinical picture being that of a severe pleuritis. All but one, an infant, however, raised a small amount of slightly "rusty" sputum. One of the pneumonia patients and six of the pleuropneumonia patients developed empyema as a sequel. Another pleuropneumonia patient had a large serous effusion, making eight cases of effusion out of the fourteen, seven being purulent and one non-purulent.

The treatment of most of the cases preceding effusion was simple, consisting of good nursing, elimination, very hot applications to the chest for pain, with morphin given in a few instances, and tepid bathing for combating a dangerously high temperature.

The empyema patients ranged from 14 months to 72 years of age. Five were males and two females. In four cases the pus was in the right pleural cavity and in three in the left. I operated twice by incision in an intercostal space and five times by resection of a rib, and all recovered. The gross appearance of the pus was that of a pneumococcus infection. In the case of non-purulent effusion the patient recovered satisfactorily after the withdrawal of nearly a half-gallon of fluid from the pleural cavity.

THE ASSOCIATION OF ENTEROCOLITIS WITH PNEUMONIA

MARK LIEBERT, M.D.
BROOKLYN

The prevailing epidemic of enterocolitis and pneumonia running typical courses side by side will, no doubt, arouse the interest of many practitioners. The field for bacteriologic study should yield much useful information. The two diseases apparently aggravate each other, but the course of either is not otherwise modified. They appear either to arise simultaneously or closely to follow each other. The diarrhea follows the operation of the usual causes, most often occurring in bottle-fed infants or children fed on malted milk, though I have seen a case in an exclusively breast-fed infant.

The simultaneous involvement of the respiratory and gastrointestinal tracts would suggest the presence of a common predisposing cause. In a few cases there was a history of a preceding prolonged bronchitis. The stools are small in amount and occur at great frequency. At first they are greenish, mucoid and very fetid; later they become serous in character. They may be yellowish, showing particles of curdled undigested milk. In one of my cases the stools were blood-streaked. If diarrhea exists before consolidation has taken place in the lungs, there is usually a temperature between 101 F. and 102 F. With consolidation the temperature may be very high, reaching 105.5 F. Prostration is marked. In one of my cases cough was entirely absent, while the lungs gave typical physical signs. These cases usually occur in the second year, although I had one case in a boy of six.

Treatment should be directed chiefly to the diarrhea. In this I follow the teachings of Dr. Joseph E. Winters, of New York. Castor oil at the outset, starvation for from 24 to 36 hours, with plenty of cold water during this period. I have seen fever go down precipitately under this treatment alone. Even drugs are to be excluded. At the end of from 24 to 36 hours feeding is begun according to age. For children less than 10 months old, cow's milk is modified so as to minimize proteids; above 10 months cereals are given and milk avoided. I do not think that the exclusion of milk tends to aggravate the course of the pneumonia. The fever is treated by tepid sponging and the ice-bag to the head. High rectal enemas, as shown by Dr. Winters, may increase the cyanosis and tend to produce collapse.

This is written in the hope that it may interest others whose experience has been extensive in this class of cases. It is a live, timely topic and much may be said that will prove beneficial to all in the treatment of two dangerous affections.

57 Christopher Avenue.

PIN EXTRACTED FROM TRANSVERSE COLON

FRED V. WATSON, M.D.
ANTIGO, WIS.

The cases reported in THE JOURNAL, one (April 10, 1909) of a darning needle, extracted from epigastrium of an infant, the other (June 5, 1909) of a scarf pin swallowed by an infant and found protruding from the anus, have prompted me to report a case that occurred in my practice last week.

History.—A young woman, aged 18, with an acute attack of appendicitis second day complained of a sharp sticking pain over the line dividing the right hypochondriac region from the epigastric region. As there was extreme tenderness over McBurney's point with tympanites, colicky pain and vomiting, pulse 120, temperature 102 F., nothing was thought of this pain, but a diagnosis of acute catarrhal appendicitis was made and immediate operation advised.

Operation.—Under ether anesthesia I made my incision directly over McBurney's point, and on searching for the appendix I picked up a part of the transverse colon that contained a pin. This was extracted and the wound closed with a puckering string of Pagenstecher's linen. The appendix was then located and found to be in an acute catarrhal condition, curled on itself, with adhesions from a former attack. It was removed in the usual manner and the patient made a good recovery. The patient has no knowledge of swallowing the pin.

Therapeutics

TAPEWORM

While the eradication of this unwelcome parasite sounds simple enough when the treatment of the condition is read in a text-book, such treatment, and any treatment, is often not successful in obtaining the head of the animal, which is the main object at which the treatment aims. Administration of the oleoresin of male fern is the treatment most generally used, and perhaps has been the one most frequently successful.

Dr. Seymour Spier, of New Haven, Conn., has had almost constant success with pomegranate. An unpublished letter from this physician thus describes his exact method of procedure: He first prepares a decoction from 60 grams of fresh pomegranate bark to 500 c.c. of water, slowly boiling this down to 250 c.c. (2 ounces of the bark to a pint of water, boiled down to half a pint). On the day before the administration of the anthelmintic the patient is given a cathartic, a good dose of compound licorice powder or other efficient purgative, in the morning. He is allowed breakfast and noon meal as usual. The supper, or evening meal, should consist of bread, or crackers, in milk. Before retiring he is given a soap suds enema, and at 6 a. m. the next morning, the morning of treatment, he is given half, viz., 125 c.c. (4 ounces) of the half-pint of the prepared pomegranate decoction. Half an hour later he is given a tablespoonful of castor oil, and in another half hour the patient takes the remainder (125 c.c., or 4 ounces) of the decoction. In thirty minutes this is followed by two tablespoonfuls of castor oil. The oil may be given in lemon juice on cracked ice, or on black coffee. If the oil is positively objectionable, instead of it, forty-five minutes after the administration of the last dose of pomegranate decoction he may be given a dose of salts, or even a bottle of the pleasant tasting effervescing citrate of magnesium. In a few hours the patient almost invariably passes the worm, as a whole with head attached, without any prolonged griping or very frequent movements. The patient is then immediately ready for his breakfast or luncheon.

If previous examination of the segments of the worm has shown it to be of the pork variety (*Tænia solium*), Spier adds one drop of croton oil to the last portion of the decoction.

As the above decoction is bitter, and sometimes nauseating to the patient, and as a concentrated preparation of the alkaloids of the pomegranate is made especially for the treatment of tapeworm, and can be obtained, it may be ordered. It is much pleasanter to take and as effective as the crude drug. In fact, Spier says he has found it difficult to obtain fresh, active pomegranate bark, and to be successful the drug must be active.

The only disagreeable symptoms that occur from the administration of pomegranate in the above dosage is that there may be dizziness, and sometimes a partial amblyopia, which lasts from five to fifteen minutes. This is never serious, soon passes off, and is generally dispelled by a dose of whiskey or brandy.

Pomegranate (Granatum, U. S. P.) occurs as a bark which contains, besides about 25 per cent. tannic acid, several alkaloids, the most important of which are pelletierin and isopelletierin (sometimes called isopunicin). These alkaloids have some action similar to atropin, hence probably the effect on the eyes. If toxic doses be administered, or if large doses remain long in the gastrointestinal canal without being pushed rapidly along by cathartics, not only would dizziness and amblyopia be caused, but there would be bowel cramps, nausea, vomiting, and there might be muscle cramps, especially in the legs.

If the alkaloids be carefully prepared, the official preparation of pelletierinæ tannas, which is a mixture of the alkaloids of the pomegranate, should be an efficient preparation. The dose listed in the Pharmacopeia is 0.25 gram (4 grains).

Dr. Spier has never seen serious or persistent unpleasant symptoms occur from the administration of pomegranate as he has described it.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 460)

CEPHAELINE—Cephaelina.—An alkaloid, $C_{14}H_{20}NO_2$, obtained from ipecacuanha root.

Cephaelin occurs as snow-white, fine, interlacing needles which readily turn yellow. It is soluble in ether and caustic soda solutions, melts at 96°-102° C (204.8°-215.6° F) and turns brown when heated to 120° C (248° F). With Fröhde's reagent, a freshly prepared solution of 0.1 Gm. sodium molybdate in 10 Cc. concentrated sulphuric acid, it gives a purple color which hydrochloric acid changes to prussian blue.

Action and Uses.—These are identical with those of ipecac. It is relatively more emetic and less nauseant and causes relatively more renal irritation and less cardiac depression. It may be employed as an emetic and expectorant.

Dosage.—0.005 to 0.01 Gm. (1/12 to 1/6 grain) in pills or as a powder triturated with sugar of milk. The hydrochloride is soluble.

HOLADIN AND BILE SALTS, Fairchild.—This preparation is a mixture of Holadin (which see) 5 parts with bile salts, Fairchild (which see) 1 part, put up in 3 grain capsules, containing holadin approximately 0.15 Gm. (2½ grains), and bile salts 0.03 Gm. (½ grain).

Dosage.—One capsule about three hours after meals and one capsule at bedtime.

Prepared by Fairchild Bros. & Foster, New York.

NOVOCAINE NITRATE—Novocainæ Nitras.—Novocaine nitrate, $C_6H_4.NH_2(COO.C_2H_4.N(C_2H_5)_2.HNO_3 = C_{13}H_{21}O_5N_3$, is the nitrate of p—aminobenzoyldiethylaminoethanol, the base contained in novocaine.

Novocaine nitrate occurs in small colorless and odorless crystals, soluble in water and alcohol. The aqueous solution is neutral in reaction. Melting point 100°-102° C. (212°-215° F.).

If 0.1 Gm. novocaine nitrate be dissolved in 1 Cc. concentrated sulphuric acid and a solution of ferrous sulphate carefully floated above it, a brown zone is formed at the surface of contact of the two solutions. 1 part novocaine nitrate dissolved in 10 parts water and acidified with nitric acid, should yield no precipitate upon the addition of silver nitrate solution.

Actions and Uses.—As for novocaine; may be prescribed in combination with silver salts, with which it forms no precipitate.

Dosage.—Used in 3 per cent. solutions.

Manufactured by Farbewerke vorm Meister, Lucius & Bruening, Hoechst A. M. (Victor Koechl & Co., New York).

Patents or trademarks: None.

(To be continued)

MEDICAL COLLEGES OF THE UNITED STATES

Below are given brief descriptions of the medical colleges in the United States that are legally chartered to teach medicine, several of which do not grant degrees. The name, address, year of organization, history and date when first class graduated is given in each instance. Unless otherwise stated, a class graduated each subsequent year. Where official reports have been received from the college, information regarding faculty, entrance requirements, length of term, fees, students, graduates, name of dean and next session is given without discrimination, regardless as to whether the college is sectarian or not. In the few instances where such reports were not received the information published is from other reliable sources. Extracts of rules and the membership of each of the college associations is shown following the list of colleges. Figures showing population of cities and states are taken from the United States Census Bureau's estimates for 1906.

ALABAMA

Alabama, population 2,017,877, has two medical colleges, the Medical Department of the University of Alabama and the Birmingham Medical College, located, respectively, in Mobile and Birmingham. The population of Mobile is 42,903 and of Birmingham 45,869.

Birmingham

Birmingham Medical College. Avenue F and Twentieth Street.—Chartered in 1894. The first class graduated in 1895. There are 22 professors and 10 assistants, total 32. The course of instruction embraces four separate sessions of seven months each. The fees are $75 for each of the first three years and $100 for the fourth. The Dean is Dr. B. L. Wyman. Registration, 1908-9, 169, graduates, 28. The sixteenth session begins Sept. 29, 1909, and ends Apr. 28, 1910.

Mobile

Medical Departm [illegible] of Alabama. St. Anthony and Lawrence [illegible] as the Medical College of Alabama. Classes [illegible] and in all subsequent years except 1862 t [illegible] as reorganized as the Medical Department of the University of Alabama in 1897. All property was transferred to the University of Alabama and the present title assumed in 1907. The faculty consists of 8 professors and 17 lecturers and assistants, a total of 25. The course of study covers four years of seven months each. The total fees for each of the first three years is $100; for the fourth year, $125. The Dean is Dr. Rhett Goode. The total registration for 1908-9 was 191, graduates, 29. The forty-fourth session begins Sept. 20, 1909, and ends Apr. 18, 1910.

ARKANSAS

Arkansas, population 1,421,574, has two medical colleges, the Medical Department of the University of Arkansas and the College of Physicians and Surgeons, both located in Little Rock, a city of 39,959 people.

University of Arkansas Medical Department, Second and Sherman Streets.—Organized in 1879 as the Arkansas Industrial University. The first class graduated in 1880. It assumed the present title in 1899. The faculty consists of 19 professors and 13 lecturers and assistants, total 32. The course of study covers four years of seven months each. The fees are: Matriculation, $5, paid but once; tuition, per year, $60; graduation fee, $25. The Secretary is Dr. C. E. Witt. Total registration, 1908-9, was 179; graduates, 22. The fourteenth session begins Oct. 1, 1909, and ends Apr. 30, 1910.

College of Physicians and Surgeons. Lincoln Avenue, north of the Union Station.—It was organized in 1906. The first class graduated in 1907. The faculty consists of 30 professors and 12 lecturers and assistants, a total of 42. The course of study covers four years of seven months each. The Dean is Dr. J. P. Runyan. The total registration for 1908-9 was 81, graduates, 14. The third session begins Oct. 1, 1909, and ends May 1, 1910.

CALIFORNIA

California, population 1,648,049, has seven medical colleges. Four are located in San Francisco, a city having, before the earthquake, 355,919 inhabitants. They are Leland Stanford Junior University College of Medicine, Medical Department of the University of California, Hahnemann Medical College of the Pacific and the College of Physicians and Surgeons. The College of Physicians and Surgeons and the California Eclectic Medical College are situated in Los Angeles, population 116,420. The Oakland College of Medicine and Surgery is in Oakland, population 73,812.

Los Angeles

College of Physicians and Surgeons. 516 E. Washington Street.—It was organized in 1903. The first class graduated in 1905. The course covers four years of nine months each. The faculty consists of 29 professors and 13 lecturers and instructors, a total of 42. The fees for the four years respectively are $135, $132, $107 and $132. The Dean is Dr. Charles W. Bryson, Delta Building, Los Angeles. The registration for 1908-9 was 32, graduates 5. The seventh session begins Sept. 5, 1909, and ends June 15, 1910.

California Eclectic Medical College. 846 Lyon Street.—Organized in 1879 at Oakland as the California Medical College. Removed to San Francisco in 1887. Suspended in 1906. Reorganized at Los Angeles with the present title in 1907. Classes were graduated in 1880, and in all subsequent years except 1907. It has a faculty of 27 professors. The Dean is Dr. J. A. Munk. The registration for 1908-9 was 7; graduates 4. The thirtieth session begins Sept. 13, 1909, and ends May 21, 1910.

Oakland

Oakland College of Medicine and Surgery. Thirty-first and Grove streets.—Organized in 1900, opened in 1902. The first class graduated in 1906. The faculty numbers 33. The course covers four years of nine months each, and the classes are limited to ten students each. The total fees for each of the four years respectively are $165, $160, $150 and $175. The Registrar is Dr. Edward N. Ewer. The total registration for 1908-9 was 17; graduates, 4. The eighth session begins Aug. 15, 1909, and ends about May 21, 1910.

San Francisco

Hahnemann Medical College of the Pacific. Homeopathic. Sacramento and Maple streets.—Organized in 1881 as the Hahnemann Medical College. The first class graduated in 1884. In 1888 it became the Hahnemann Hospital College of San Francisco. It assumed the present name in 1902. It has a faculty of 19 professors and 13 lecturers, instructors, etc., a total of 32. The course covers four years of seven months each. Total fees for the first year are $155, and $100 for each of the other three. The Dean is Dr. James W. Ward, 1380 Sutter Street. The total registration for 1908-9 was 23; graduates 6. The 28th session begins Aug. 31, 1909, and ends Apr. 28, 1910.

College of Physicians and Surgeons. 344 Fourteenth Street. [illegible]. The first class graduated in 1897. The [illegible] The course covers four years of thirty weeks [illegible] is Dr. Winslow Anderson. Registration for 1908-9 was 40; graduates 11. The fourteenth session begins Sept. 14, 1909, and ends May 14, 1910.

San Francisco-Palo Alto

Leland Stanford Junior University, College of Medicine. University Campus, Palo Alto, and Sacramento and Webster Streets, San [illegible] 1858 as the Medical Department of the [illegible] Discontinued in 1864. Revived in 187 [illegible] College of the Pacific, Medical Department of the University College of San Francisco in 1873. Became Cooper Medical College in 1882. United with Leland Stanford Junior University with present title in 1908. Classes were graduated in 1860, and in all subsequent years, except 1865 to 1869, inclusive. Three years of collegiate work are required for admission. The work of the first three semesters will be given at Palo Alto, the last five semesters at San Francisco. The faculty consists of 18 professors and 36 lecturers, instructors, etc., 54 in all. The course covers four years of eight and a half months each. Fees: First year, $175; second and third years, $170 each; fourth year, $195. The secretary is Dr. William Fitch Cheney. Total registration for 1908-9 was 117; graduates, 22. The forty-first session begins Aug. 15, 1909, and ends May 7, 1910.

San Francisco-Berkeley-Los Angeles

University of California, Medical Department. University Campus, Berkeley; Second and Parnassus Avenues, San Francisco and Buena Vista and Alpine Streets, Los Angeles.—Organized in 1863 as the Toland Medical College. The first class graduated in 1865. In 1872 it became the Medical Department of the University of California. In 1909 it absorbed the College of Medicine of the University of Southern California, which became a clinical department at Los Angeles. Two years of collegiate work are required for admission. At the San Francisco Department only the last two or clinical years are taught, the first two being at Berkeley. At the Los Angeles Department during the session of 1909-10 the work of the last three years will be taught, but beginning with the session of 1910-11 and thereafter all the work of the first two years will be at Berkeley and the work of the last two years at either Los Angeles or San Francisco. The faculty is composed of 43 professors and 80 associates and assistants, a total of 123. The course covers four years of nine months each. The fees are: Matriculation, $5; tuition, $150 each year; laboratory fees extra. The Dean at San Francisco is Dr. Arnold A. D'Ancona; at Los Angeles, Dr. W. Jarvis Barlow. Total registration of the two schools for 1908-9 was 108; graduates, 23. The thirty-seventh session begins Aug. 15, 1909, and ends May 11, 1910.

COLORADO

Colorado, with a population of 615,570, has three medical colleges. Two of these, Denver and Gross College of Medicine and the Denver College of Physicians and Surgeons, are in Denver, which has a population of 151,920, the other, the Colorado School of Medicine, is at Boulder, population 12,000.

Boulder

University of Colorado School of Medicine.—Organized in 1883. Classes were graduated in 1885 and in all subsequent years, except 1898 and 1899. The faculty embraces 25 professors and 22 lecturers and assistants, a total of 47. The work embraces a graded course of four years of nine months each. Beginning with the session of 1910-11 the entrance requirements will be two years of college work counting toward a degree in arts in an accredited college or university. The tuition is $52 per year; there are no other fees. The Dean is Dr. William P. Harlow. The total registration for 1908-9 was 54; graduates, 11. The twenty-eighth session begins Sept. 13, 1909, and ends June 8, 1910.

Denver

The Denver and Gross College of Medicine, 1025 Fourteenth Street.—It is the Medical Department of the University of Denver. Organized in 1902 by the union of the Gross Medical College (organized in 1887) with the Denver College of Medicine (organized in 1880). Classes were graduated in 1903 and in all subsequent years. The faculty is made up of 33 professors, 38 assistants and instructors, a total of 71. The course covers four years of eight months. Fees for each of the four years respectively are $130, $130, $131 and $126. The Dean is Dr. George H. Stover, 1443 Glenarm Pl. The total registration for 1908-9 was 109; graduates, 23. The twenty-eighth session begins Sept. 28, 1909, and ends May 26, 1910.

Denver College of Physicians and Surgeons (Regular and Homeopathic), 1317 Fourteenth Street.—Organized in 1894 as the Denver Homeopathic College. The name was changed in 1907 to the Westminster University College of Medicine and again in 1908 to the present title. Since 1907 it has offered to teach two systems of medicine. Its faculty numbers 46. The Dean is Dr. David A. Strickler. The total registration for 1908-9 was 34; graduates, 7. Next session begins Sept. 6, 1909, and ends May 12, 1910.

CONNECTICUT

Connecticut, with a population of 1,005,716, has only one medical college, located in New Haven, population 121,227.

New Haven

Yale Medical School, York and Chapel Streets.—This is the Department of Medicine of Yale University. In 1810 a charter was granted for the establishment of this school, and in 1813 it was organized as the Medical Institution of Yale College. The first class graduated in 1814. The faculty consists of 14 professors and 50 lecturers and assistants, a total of 64. The requirements for admission are two full years of collegiate work of fifteen hours per week. The course covers four years of nine months each. The fees are $150 each year; in the first year there are additional fees amounting to $18, and in the second $8, and there is a graduation fee of $10. The Dean is Dr. Herbert E. Smith, New Haven. The total registration for 1908-9 was 141; graduates, 15. The ninety-seventh session begins Sept. 30, 1909, and ends June 22, 1910.

DISTRICT OF COLUMBIA

Washington, population 307,716, has three medical colleges; George Washington University Department of Medicine, Georgetown University School of Medicine and Howard University Medical Department.

Washington

George Washington University, Department of Medicine, 1325 H Street, N.-W.—Organized in 1825 as the National Medical College, Medical Department of Columbian College. Classes were graduated in 1826 and in all subsequent years, except 1834 to 1838, and 1861 to 1863, inclusive. The original title was changed to Medical Department of Columbian University in 1873. In 1904, by an act of Congress, it received its present title. The faculty is composed of 42 professors and 40 instructors, demonstrators and assistants, a total of 82. The course covers four years of eight months each. The total fees are $150 per year. The Dean is Dr. William C. Borden. The total registration for 1908-9 was 156; graduates, 33. The eighty-eighth session begins Sept. 29, 1909, and ends June 8, 1910.

Georgetown University, School of Medicine, 920 H Street, N.-W.—Organized in 1851. The first class graduated in 1852. The faculty contains 20 professors, 54 instructors and assistants; total 74. The course of study covers four terms of eight and one-half months each. The fees are $150 each year. The Dean is Dr. George M. Kober, 1600 T Street. The registration for 1908-9 was 89; graduates, 15. The fifty-ninth session begins Oct. 1, 1909, and ends June 11, 1910.

Howard University, Medical Department, Fifth and W Streets, N.-W.—Chartered in 1867. Organized in 1869. The first class graduated in 1871. Colored students compose a majority of those in attendance. The faculty comprises 22 professors and 30 lec- [illegible] in all. The course covers four years of [illegible] es of each session are $100, plus $10 for [illegible] is Dr. William C. McNeill. Registration [illegible] uates, 26. The forty-second session be- [illegible] s June 1, 1910.

GEORGIA

Georgia, population 2,443,719, has five medical colleges; Medical College of Georgia, located in Augusta, population 43,125; Atlanta College of Physicans and Surgeons, Atlanta School of Medicine, the Georgia College of Eclectic Medicine and Surgery, and the Hospital Medical College are in Atlanta, a city of 104,984 population.

Atlanta

Atlanta College of Physicians and Surgeons, Butler and Armstrong [illegible] 1898 by union of the Atlanta Medical Co [illegible] and Southern Medical College, organized i [illegible] graduated in 1899. It has a faculty of 23 professors and 28 assistants, a total of 51. The course of study covers four years of seven months each. Fees: First and second years, $80 each; third and fourth, $100 each. The Dean is Dr. W. S. Elkins, 29 Luckie St. Total registration of students for 1908-9 was 280; graduates, 37. The twelfth session begins Sept. 27, 1909, and ends May 1, 1910.

Atlanta School of Medicine, Luckie, Barton and Cain Streets.—Organized in September, 1905. The first class graduated in 1906. The course covers four years of seven months each. It has a faculty of 13 professors and 27 lecturers and assistants, a total of 40. The fees for each of the first two years are $70; for each of the last two, $80. The Proctor is Dr. Edward G. Jones. The total registration for 1908-9 was 281; graduates, 51. The fifth session begins Oct. 1, 1909, and ends May 1, 1910.

Georgia College of Eclectic Medicine and Surgery, Tanner Street, near Edgewood Avenue.—Organized in 1877 as the Georgia Eclectic Medical College. In 1884 it acquired the charter of the College of American Medicine and Surgery. It assumed its present name in 1886. The first class graduated in 1878. The faculty consists of 14 professors and 6 assistants, a total of 20. Tuition is $80 per year; graduation fee, $25. The Proctor is Dr. E. B. Thomas. Total registration for 1908-9 was 66; graduates, 15. The next session begins Sept. 21, 1909, and ends Apr. 21, 1910.

Hospital Medical College, Eclectic, Capitol Avenue and Richardson Street.—Organized in 1908. The faculty consists of 16 professors, and 8 lecturers and assistants, a total of 24. The tuition fees are $80 each year; graduation fee, $30. The Dean is Dr. William Bernard Lingo. Total registration for 1908-9 was 43; graduates, 17. The next session begins Sept. 15, 1909, and ends April 1, 1910.

Augusta

Medical College of [illegible] Telfair Streets.—Organized in 1828 as the " [illegible] eorgia, the name being changed to the Medical [illegible] 1829. Since 1873 it has been known as th [illegible] of the University of Georgia. Classes were graduated in 1833 and in all subsequent years, except 1862 and 1863, inclusive. The faculty includes 17 professors and 17 assistants, 34 in all. The course is four years of seven months each. Fees for the four years respectively are $90, $85, $100, $100. The Dean is Dr. Joseph Eve Allen. The total registration for 1908-9 was 99; graduates, 22. The seventy-eighth session begins Oct. 1, 1909, and ends May 1, 1910.

ILLINOIS

Illinois, population 5,418,670, has thirteen medical colleges, four of which are night schools, all located in Chicago, a city of 2,049,185 inhabitants, and are as follows: Rush Medical College, Northwestern University Medical School, College of Physicians and Surgeons, Hahnemann Medical College, Bennett Medical College, Hering Medical College, Jenner Medical College, Illinois Medical College, American Medical Missionary College, College of Medicine and Surgery, National Medical University, Chicago College of Medicine and Surgery and Reliance Medical College.

Chicago

Rush Medical College.—This school was founded in 1837, organized in 1843, was the medical department of Lake Forest University from 1887 until 1898, when it became affiliated with the University of Chicago. The first class graduated in 1844. The faculty is composed of 89 professors, 141 associates, instructors, etc., a total of 230. The requirements for admission are a four-year high school education and, in addition thereto, two years of college work, including courses in college chemistry, physics and biology, and a reading knowledge of German or French. The course covers four years of nine months each. An optional fifth year, consisting of a hospital interneship or of a fellowship in one of the departments is offered. All freshmen and sophomore studies are given at the University of Chicago. The last two years are given in the clinical buildings at the corner of Wood and Harrison Streets. The total fees are $180 each year. A matriculation fee of $5 is paid but once, and there are incidenta [illegible] annually. The Dean is Dr. John M. [illegible] Total registration 1908-9 was 488; g [illegible] session begins Oct. 1, 1909, and ends June 18, 1910.

Northwestern University Medical School, Dearborn Street, between Twenty fourth and Twenty-fifth [illegible] 1859 as the Medical Department of Lind [illegible] became independent as the Chicago Medical [illegible] Northwestern University in 1869, but retain [illegible] Medical College until 1891, when the presen [illegible] faculty comprises 54 professors and 89 lecturers and assistants, a total of 143. The requirements for admission are such as will admit to the College of Liberal Arts of Northwestern University plus two years of college work including courses in physics, chemistry, biology and modern languages. The course covers four years of thirty-six weeks each. The fees for the first year are $194; second year, $200; third year, $191.50, and fourth year, $185. The Secretary is Dr. Charles Louis Mix. The total registration for 1908-9 was 621; graduates, 172. The fiftieth session begins Oct. 5, 1909, and ends May 29, 1910.

College of Physicians and Surgeons, Honore and Congress Streets.—Organized in 1882. The first class graduated in 1883. It became the Medical Department of the University of Illinois in 1896. The faculty is composed o [illegible] nts and instructors, a total of 198. The [illegible] the first two years, $150 for the third, ar [illegible] ar. The Dean is Dr. William E. Quine, 10 [illegible] istration for 1908-9 was 517; graduates, [illegible] session begins Sept. 28, 1909, and ends [illegible]

American Medical Missionary College, 888 Thirty-fifth Place.—Organized in 1895. The first class graduated in 1899. Part of the work is given at Battle Creek, Michigan. The faculty numbers 22 professors and 10 assistants, a total of 32. The course covers four years of nine months each. Total fees for the four years respectively are $83, $82, $75, $75. The Secretary is Dr. E. L. Eggleston, Battle Creek, Mich. Total registration for 1908-9 was 60; graduates, 5. The fifteenth session opens Sept. 14, 1909, and closes June 15, 1910.

Chicago College of Medicine and Surgery, 337 South Lincoln Street.—Organized in 1901 as the American College of Medicine and Surgery (Chicago Eclectic Medical College). The latter part of the name was dropped in 1902 when it became the Medical Department of Valparaiso University. Eclecticism was dropped in 1905. The name was changed to the above in 1907. The course covers four years of eight months each. The faculty consists of 37 professors and 34 lectur[illegible] total of 71. The total fees for each of the f[illegible] are $120, $115, $100 and $115. The total [illegible] was 396; graduates, 80. The ninth sessio[illegible] 9, and ends May 16, 1910. The Secretary is Dr. J. N. Roe.

Hahnemann Medical College and Hospital of Chicago, 2811 Cottage Grove Avenue.—Organized in 1859. The first class was graduated in 1861. The faculty includes 38 professors and 46 lecturers, assistants, etc., a total of 84. The tuition fees are $100 each year. The Registrar is Dr. W. Henry Wilson. The total registration for 1908-9 was 132; graduates, 25. The fiftieth session begins Sept. 27, 1909, and ends May 26, 1910.

Hering Medical College, Homeopathic, Wood and York Streets.—Organized in 1892. The first class graduated in 1893. The faculty consists of 26 professors and 24 assistants, instructors, etc., a total of 50. The tuition fees are $100 per year. The Dean is Dr. Robert N. Morris. The total registration for 1908-9 was 40; graduates, 10. The next session begins Sept. 28, 1909, and ends June 2, 1910.

Illinois Medical College, Corner Washington Boulevard and Halsted Street.—It was organized in 1894. Classes were graduated in 1895 and in all subsequent years. The faculty consists of 38 professors and 20 lecturers and assistants, a total of 58. The course covers four years of seven months each. The fees are about $125 each year. The President is Dr. J. F. Burkholder. The total registration for 1908-9 was 62; graduates, 16. The fifteenth session begins Sept. 2, 1909, and ends April 29, 1910.

Bennett Medical College, Fulton and Ada Streets.—Organized in 1868 as the Bennett College of Eclectic Medicine and Surgery. Dropped Eclecticism in 1909. The first class graduated in 1870. The faculty numbers 57. The course covers four years of thirty weeks each. Fees for each year are $100, with a matriculation fee, paid once, of $5. The President is Dr. John D. Robertson. The total registration for the college year 1908-9 was 186; graduates, 39. The next session begins Sept. 21, 1909, and ends May 23, 1910.

College of Medicine and Surgery, Physiomedical, 721-725 South Wood Street.—Organized in 1885 as the Chicago Physiomedical institute. The first class graduated in 1886. In 1891 the name was changed to the Chicago Physiomedical College. In 1899 it took its present name. The faculty numbers 49. The school year has three divisions of 16 weeks each. Attendance on any two will constitute a year's work. Fees for the four years respectively are $115, $110, $110 and $135. The Secretary is Dr. William F. Schaare. The total registration for 1908-9 was 33; graduates, 10. The next session begins Sept. 21, 1909, and ends May 11, 1910.

Jenner Medical College, a night school, located at 196 East Washington Street.—Organized in 1892. Classes were graduated in 1896 and in all subsequent years. The faculty numbers 50. Registrar, Dr. John D. MacKellar. Total registration for 1908-9 was 112; graduates, 12. The next session begins Aug. 30, 1909, and ends July 1, 1910.

National Medical University, a night school located at 531 Wells Street.—Organized in 1891 as the National Homeopathic Medical College. The first class was graduated in 1902. In 1895 the word "Homeopathic" was dropped. It took the above name in 1900. The faculty numbers 36. The total fees are $150 each year. The Dean is Dr. L. D. Rogers. Total registration for 1908-9 was 150; graduates, 12. *Reported to be not in good standing by the Illinois State Board of Health.*

Reliance Medical College. A night school, located at Washington Boulevard and Halsted Street.—Organized in 1907. The faculty numbers 65. The total fees are $130 for each of the first two years and $125 for each of the last two. Registration for 1908-9 was 83; graduates, 18. The President is Dr. J. F. Burkholder. The next session begins Sept. 7, 1909, and ends June 29, 1910.

INDIANA

Indiana, population 2,710,898, has two medical colleges, the Indiana University School of Medicine and the Physio-Medical College of Indiana. Both are located at Indianapolis, a city of 219,154 people, except that the work of the first two years of the Indiana University School of Medicine is offered also at Bloomington, population 5,000, the seat of the University.

Bloomington and Indianapolis

Indiana University School of Medicine.—Organized in 1893, but did not give all of the work of the first two years of the medical course until 1905. In 1907, by union with the State College of Physicians and Surgeons, the complete course in medicine was offered. In 1908 the Indiana Medical College, which was formed in 1907 by the merger of the Medical College of Indiana (organized in 1879) and the Fort Wayne College of Medicine (organized in 1879) merged into it. The faculty consists of 99 professors and 76 lecturers, associates and assistants, a total of 175. In 1909, besides a four-year high school education, one year, and in 1910 and thereafter, two years of collegiate work will be required for admission. The work of the first two years may be taken either at Bloomington or at Indianapolis. The clinical work is all done at Indianapolis. A fifth optional year leading to the "M.D. *cum laude*" has been added. The Secretary at Bloomington is Dr. B. D. Myers; at Indianapolis, Dr. Edmund D. Clark, Newton-Claypool Bldg. The total registration for 1908-9 was 266; graduates, 64. The next session begins Sept. 21, 1909, and ends June 22, 1910.

Physiomedical College of Indiana. Fourteenth Street and College Avenue.—Organized in 1873. The first class graduated in 1874. The Dean is Dr. C. T. Bedford. The total registration for 1908-9 was 19; graduates, 5.

IOWA

Iowa, population 2,205,690, has four medical colleges. The College of Medicine of the State University of Iowa and the College of Homeopathic Medicine of the State University of Iowa are located in Iowa City, population 8,497. In Des Moines, population 78,323, is the College of Medicine of Drake University. In Sioux City, population 42,520, is the Sioux City College of Medicine.

Des Moines

Drake University College of Medicine.—First two years given on the University Campus, University Avenue, between Twenty-fifth and Twenty-eighth Streets, the clinical years at Fourth and Center Streets. Organized in 1882 as the Iowa College of Physicians and Surgeons. The first class graduated in 1883. In 1887 it became affiliated with and in 1900 became the Medical Department of Drake University. The faculty consists of 21 professors and 26 assistants, lecturers, etc., a total of 47. Beginning with the session of 1910-11 two years of collegiate work, including courses in physics, chemistry and histology, will be required for admission. The work covers four years of nine months each. The total fees are $75 each year. The Dean is Dr. William Wilson Pearson The total registration for 1908-9 was 130; graduates, 19. The twenty-seventh session begins Sept. 20, 1909, and ends June 15, 1910.

Iowa City

State University of Iowa College of Medicine. University Campus.—Organized in 1869. First session began in 1870. First class graduated in 1871. The faculty is made up of 20 professors, 20 lecturers, demonstrators and assistants, a total of 32. For the session of 1909-10 one year and for the session of 1910-11 and thereafter two years of collegiate work, including courses in physics, chemistry and biology, will be required for admission. The course of study covers four years of thirty-six weeks each. Total fees for each year are $50 plus a matriculation fee of $10 paid but once and a graduation fee of $10. The Dean is Dr. James R. Guthrie, Dubuque; Vice-Dean, Dr. Walter L. Bierring, Iowa City. Total number of students registered for 1908-9 was 266; graduates, 41. The 40th session begins Sept. 20, 1909, and ends June 15, 1910.

State University of Iowa College of Homeopathic Medicine.—Organized in 1877. The first class graduated in 1878. The faculty is composed of 10 professors and 15 lecturers and assistants, a total of 25. The work of the first two years is taken in classes with the students of the College of Medicine of the State University of Iowa. The fees are $50 each year, plus a matriculation fee of $10, paid but once and a graduation fee of $10. The Dean is Dr. George Royal. Total registration for 1908-9 was 42; graduates, 7. The thirty-second session begins Sept. 20, 1909. and ends June 15, 1910.

Sioux City

Sioux City College of Medicine. corner of Fourteenth and Jones Streets.—Organized in 1891. The first class graduated in 1893. Teaches only the last two or clinical years of the medical course. The total registration for 1908-9 was 20; graduates, 6. The Dean is Dr. F. E. Franchere.

KANSAS

Population 1,612,471, has three medical colleges. Kansas Medical College is in Topeka, population 41,880, and the Western Eclectic College of Medicine and Surgery is at Kansas City. The School of Medicine of the University of Kansas gives its first two years in Lawrence, population 12,123, and the last two years in Rosedale, a suburb of the two Kansas Cities, which together have a population of 260,288.

Kansas City

Western Eclectic College of Medicine and Surgery, Central and Simpson Avenues.—Organized at Kansas City, Mo., in 1898 as the Eclectic Medical University. Moved to Kansas City, Kan., in 1907. Took the present name in 1908. First class graduated in 1900. The faculty numbers 32. Fees for the four years respectively are $90, $95, $100 and $115. Course covers four years of about eight months each. The Secretary is Dr. W. H. Smith. The total registration for 1908-9 was 50; graduates, 7. The twelfth session begins Sept. 6, 1909, and ends April 30, 1910.

Lawrence and Kansas City

University of Kansas School of Medicine.—Organized in 1880. In 1905 it merged with the Kansas City (Mo.) Medical College, founded in 1869, the College of Physicians and Surgeons, founded in 1894, and the Medico-Chirurgical College, founded in 1897. The faculty, including lecturers and clinical assistants, numbers 79. The requirements for admission are two years of collegiate work. The course covers four years of about nine months each. The total fees are, for the first two years, $60 per year (and for non-residents of the state $70); for the last two years, $100 per year. The Dean at Lawrence is Dr. Mervin T. Sudler. The Dean at Kansas City is Dr. George Howard Hoxie. The total registration for 1908-9 was 90; graduates, 7. The thirtieth session begins Sept. 15, 1909, and ends June 8, 1910.

Topeka

Kansas Medical College, 521 Quincy Street.—Organized in 1890. The first class graduated in 1892. It has been the Medical Department of Washburn College since 1893. It has a faculty of 31 professors and 16 lecturers and assistants, a total of 47. The course covers four years of thirty weeks each. Fees, $65 yearly. The Dean is Dr. William E. McVey. Total registration for 1908-9 was 68; graduates, 17. The twentieth session begins Sept. 14, 1909, and ends June 8, 1910.

KENTUCKY

Kentucky, population 2,320,298, has three medical colleges. They are all situated in Louisville, a city of 226,129 inhabitants, and are as follows: University of Louisville Medical Department, Southwestern Homeopathic Medical College and Louisville National Medical College.

Louisville

University of Louisville Medical Department, Eighth and Chestnut Streets.—Organized in 1837 as the Louisville Medical Institute. The first class graduated in 1838, and a class graduated in each subsequent year except 1863. In 1846 the present name was assumed. In 1907 it absorbed the Kentucky University Medical Department. In 1908 it absorbed the Louisville Medical College, the Hospital College of Medicine and the Kentucky School of Medicine. It has a faculty of 28 professors and 27 lecturers and assistants, a total of 55. The course covers four years of thirty weeks each. The fees are $100 each year; graduation fee, $25. The Dean is Dr. T. C. Evans. The total registration for 1908-9 was 706, graduates, 181. The next session begins Nov. 15, 1909, and ends June 30, 1909.

Southwestern [illegible] al College and Hospital, Floyd and Walnut [illegible] in 1892. The first class graduated in 1894. [illegible] f 13 professors and 10 lecturers and assistar [illegible] urriculum covers four years of seven months each. Total fees: First three years $75 each and $95 for the fourth. The Dean is Dr. George S. Coon. Total number of students for 1908-9 was 13; graduates, 3. The seventeenth session begins Oct. 6, 1909, and ends May 19, 1910.

Louisville National Medical College. Colored. 112 West Green Street.—Organized in 1888. The first class graduated in 1889. The faculty numbers 28. The course covers four years of seven months each. The fees are $60, $55, $55 and $75 for the four years, respectively. The Dean is Dr. E. S. Porter. Total registration for 1908-9 was 40; graduates, 4. The next session begins Oct. 1, 1909, and ends May 18, 1910.

LOUISIANA

Louisiana, having a population of 1,539,449, contains two medical colleges: Medical Department of the Tulane University of Louisiana and Flint Medical College of New Orleans University. They are both situated in New Orleans, a city of 314,146 people.

New Orleans

Medical Department of the Tulane University of Louisiana. University Campus and 1551 Canal Street.—Organized in 1834 as the Medical College of Louisiana. Classes were graduated in 1835 and in all subsequent years, except 1863-1865, inclusive. It was transferred to Medical Department of the University of Louisiana in 1847 and became the Medical Department of the Tulane University in 1884. The faculty numbers 73. The course covers four years of seven months each. Total fees are $150 per year. The Dean is Dr. Isadore Dyer. The total registration for 1908-9 was 439; graduates, 103. The seventy-sixth session begins Oct. 1, 1909, and ends May 18, 1910.

Flint Medical College of New Orleans University. Colored. 1566 Canal Street.—Organized in 1889 as the Medical College of New Orleans University. A class was graduated in 1892 and in each subsequent year, except 1896. Took the above name in 1901. The faculty consists of 6 professors, 9 lecturers and instructors, 15 in all. The course covers four years of thirty weeks each. Total fees, $53 each year for the first three years and $60 for the fourth. The Dean is Dr. J. W. Thomas. Total registration for 1908-9 was 24; graduates, 6. The twentieth session begins Sept. 22, 1909, and ends May 12, 1910.

MAINE

Maine, population 714,494, has one medical college, located in Brunswick and Portland, the latter having a population of 55,167.

Brunswick-Portland

Medical School of Maine. The medical department of Bowdoin College. The first two years are given at Bowdoin College, Brunswick, the last two at Portland, building located on Chadwick Street.—Organized in 1820. The first class graduated in 1820. The faculty numbers 35. The course covers four years of eight months each. The total fees are $120 for the first year and $110 for each of the other three years. The Dean is Dr. Alfred Mitchell, Brunswick. Total number of students in 1908-9 was 81; graduates, 18. The eighty-ninth session begins Oct. 21, 1909, and ends June 22, 1910.

MARYLAND

Maryland, with a population of 1,275,434, contains seven medical colleges, all located in Baltimore, a city with 553,669 inhabitants. They are as follows: Johns Hopkins University Medical Department, School of Medicine of the University of Maryland, College of Physicians and Surgeons, Baltimore Medical College, Woman's Medical College, Atlantic Medical College and Maryland Medical College.

Baltimore

Johns Hopkins University, Medical Department, Washington and Monument Streets.—Organized in 1893. The first class graduated in 1897. The faculty consists of 23 professors and 89 clinical professors, etc., a total of 112. The requirements for admission demand that the applicant either has (a) completed the chemical-biologic course which leads to the A.B. degree in the university or (b) graduated at an approved college or scientific school and has a knowledge of French and German, physics, chemistry and biology, such as may be obtained from a year's course. The course extends over four years of eight and one-half months each. The charge for tuition is $200 per annum. The Dean is Dr. William H. Howell, 232 West Lanvale Street. Total registration for 1908-9 was 297; graduates, 50. The seventeenth session begins Oct. 5, 1909, and ends June 14, 1910.

College of Physicians and Surgeons, Calvert and Saratoga [illegible] n 1872. The first class graduated in 1873. [illegible] h Washington University School of Medicine. [illegible] 57. The work covers four years of eight months each. Total fees are $155 for each of the first three years and $185 for the fourth year. The Dean is Dr. Charles F. Bevan. The total number of students registered in 1908-9 was 252; graduates, 46. The thirty-eighth session begins Oct. 1, 1909, and ends June 1, 1910.

University of Maryland School of Medicine, Lombard and Greene Streets.—Organized in 1807 as the College of Medicine of Maryland. The first class graduated in 1810. In 1812 it became the University of Maryland School of Medicine. The faculty numbers 62. The course covers four years of eight months each. The total fees are $155 each year; graduation fee, $30. The Dean is Dr. R. Dorsey Coale. The total number of students registered in 1908-9 was 329; graduates, 89. The 103d session begins Oct. 1, 1909, and ends June 1, 1910.

Baltimore Medical College, Madison Street and Linden Avenue.—Organized in 1881. The first class graduated in 1882. The faculty numbers 69. The course covers four years of eight months each. Total fees are $125 per year. The Dean is Dr. David Streett. The total number of students registered in 1908-9 was 307; graduates, 57. The twenty-eighth session begins Sept. 20, 1909, and ends May 25, 1910.

Woman's Medical College of Baltimore, McCulloch and Hoffman Streets.—Organized in 1882. Classes graduated in 1883 and in each subsequent year, except 1898. The faculty numbers 32. The course covers four years of eight months each. The fees for the first three years are $106 each, and $86 for the last year. The Dean is Dr. John R. Abercrombie, 827 North Eutaw Street. The total registration for 1908-9 was 20; graduates, 5. The twenty-eighth session begins Oct. 1, 1909, and ends May 31, 1910.

Maryland Medical College, 1114 West Baltimore Street.—Organized in 1898. The first class graduated in 1899. The faculty is composed of 13 professors and 28 lecturers and assistants, a total of 41. The course covers four years of eight months each. Matriculation fee, $5; total fees for the first three years, $86 each; fourth year, $110. The Dean is Dr. Harry Gross. The total registration for 1908-9 was 95; graduates 37. The next session begins Sept. 25, 1909, and ends June 1, 1910.

[illegible] College, Mount Street, north of Riggs Ave- [illegible] 891 as the Southern Homeopathic Medical [illegible] assumed the above name and became non- [illegible] is Dr. Eldridge C. Price. The total registration for 1908-9 was 43; graduates, 25.

MASSACHUSETTS

Massachusetts, population 3,043,346, has four medical colleges: Medical School for Harvard University, Boston University School of Medicine, College of Physicians and Surgeons and Tufts College Medical School. They are all situated in Boston, a city of 602,278.

Boston

Medical School of Harvard University, Longwood Avenue.—Organized in 1782. The first class graduated in 1788. It has a faculty of 33 professors and 133 associates, assistants, etc., a total of 166. Candidates for admission "must present a degree in arts, literature, philosophy or science from a recognized college or scientific school, with the exception of such persons as may be admitted by special vote of the faculty." Fees: Matriculation, $5; tuition, $200 each year. The Dean is Dr. Henry A. Christian. The total registration for 1908-9 was 285; graduates, 55. The 128th session begins Sept. 30, 1909, and ends June 30, 1910.

Boston University School of Medicine, 80 East Concord Street.—Organized in 1873. In 1874 the New England Female Medical College, founded in 1848, was merged into it. The first class graduated in 1874. The faculty includes 29 professors, 35 associates, etc., a total of 64. The course covers four years of eight months each. Total fees for the first, second and third years, $127 each, and for the last year, $155. The Dean is Dr. John P. Sutherland, 302 Beacon Street. Total registration for 1908-9 was 95; graduates, 18. The thirty-seventh session begins Oct. 7, 1909, and ends June 1, 1910.

Tufts College Medical School, 416 Huntington Avenue.—Organized in 1893 as the Medical Department of Tufts College. The first class graduated in 1894. It has a faculty of 33 professors and 70 assistants, lecturers, etc., a total of 103. The course covers four years of eight months each. The total fees are $155 each year. The Secretary is Dr. Frederic M. Briggs, 31 Massachusetts Avenue. Total number of students for 1908-9 was 384; graduates, 61. The sixteenth session begins Sept. 29, 1909, and ends May 26, 1910.

College of Physicians and Surgeons, 517 Shawmut Avenue.—Organized in 1880. The first class graduated in 1882. The Dean is Dr. C. H. Cobb. The total registration for 1908-9 was 172; graduates, 12. The next session begins Sept. 16, 1909, and ends June 15, 1910.

MICHIGAN

Michigan, population 2,584,533, has four medical colleges. Two of these, the University of Michigan Department of Medicine and Surgery and the Homeopathic College of the University of Michigan, are located at Ann Arbor, a city of 14,645 people. Detroit, a city of 353,535 inhabitants, contains two medical colleges, the Detroit College of Medicine and the Detroit Homeopathic College.

Ann Arbor

University of Michigan Department of Medicine and Surgery.—Organized in 1850. The first class graduated in 1851. It has a faculty composed of 22 professors, 41 associates, instructors, etc., a total of 63. The entrance requirements are two years of college work, including courses in chemistry, physics and biology, with laboratory work, and a reading knowledge of one modern language. The curriculum embraces four years of nine months each. The total fees for Michigan students for the entire course of four years is $350 and for others about $400. The Dean is Dr. Victor C. Vaughan. The total registration for 1908-9 was 404; graduates, 74. The 60th session begins Oct. 5, 1909, and ends June 30, 1910.

University of Michigan Homeopathic College.—Organized in 1875. The first class graduated in 1877. The Dean is Dr. W. B. Hinsdale. The total registration for 1907-8 was 82; graduates, 15.

Detroit

Detroit College of Medicine, St. Antoine, Catherine and Mullett Streets and Gratiot Avenue.—Organized in 1885 by consolidation of Detroit Medical College, organized in 1868, and the Michigan College of Medicine, organized in 1880. The first class graduated in 1886. The faculty embraces 25 professors, 79 lecturers, instructors, etc., a total of 104. The course covers four years of eight months each. The Registrar is Dr. F. B. Walker. The total registration for 1908-9 was 161; graduates, 38. The twenty-fifth session begins Sept. 22, 1909, and ends May 26, 1910.

Detroit Homeopathic College, Lafayette Avenue and Third Street.—Organized in 1899. A class was graduated in 1900 and in each subsequent year. It has a faculty of 36. The course embraces four years of eight months each. Fees: From $75 to $95 per year. The Dean is Dr. D. A. MacLachlan; Registrar, J. M. Griffin. Total registration for 1908-9 was 34; graduates, 7. The eleventh session begins Sept. 14, 1909, and ends May 19, 1910.

MINNESOTA

Minnesota, population 2,025,615, contains one medical college, the College of Medicine and Surgery of the University of Minnesota, situated in Minneapolis. Minneapolis and St. Paul are practically one city, and have a combined population of 477,640.

Minneapolis

Univers[illegible]
—Organize[illegible]
Paul Medic[illegible]
first class [illegible]
Physicians [illegible]
the Home[illegible] and Surgery was merged and provision made for elective chairs in didactic materia medica and therapeutics. Students electing these courses on graduation will receive the degree of Doctor of Medicine in Homeopathy. The faculty includes 49 professors and clinical professors and 71 associate professors, assistants, etc., a total of 120. The curriculum covers four years of nine months each. The entrance requirements are two years of university work which must include one year each of physics, general chemistry, qualitative analysis, zoology or botany, and German or French, all in addition to a four-year high school course including Latin. Total fees for each year, $100; microscope rental, $4 to $7 per annum. The Dean is Dr. F. F. Wesbrook. The total registration for 1908-9 was 245, including 73 Hamline University students; the graduates of 1909 numbered 63, including 16 which were granted degrees by Hamline University. The twenty-second session begins Sept. 14, 1909, and ends June 9, 1910.

MISSISSIPPI

Mississippi, population 1,708,272, has two medical colleges; the Medical Department of the University of Mississippi is located at Oxford, a city of 2,000 inhabitants, and at Vicksburg, population 15,710. The Mississippi Medical College is located at Meridian, population 20,503.

Meridian

Mississippi Medical College, Fifth Street and Twenty-fourth Avenue.—Organized in 1906. The first class graduated in 1907. The faculty numbers 16. The Dean is Dr. T. A. Barber. The total registration for 1908-9 was 102; graduates, 15. The fourth session begins Oct. 1, 1909, and ends April 30, 1910.

Oxford and Vicksburg

University of Mississippi Medical Department.—Organized in 1903 Gave only the first two years of the medical course until 1909, when a clinical department was organized at Vicksburg. The course covers four years of eight and a half months each. The work of the first two years is given at Oxford and the last two at Vicksburg. The faculty numbers 30. The Dean at Oxford is Dr. W. S. Leathers; at Vicksburg, Dr. William Krauss. The total registration for 1908-9 was 27. The seventh session begins Sept. 23, 1909, and ends June 1, 1910.

MISSOURI

Missouri, population 3,363,153, has ten medical colleges. St. Louis, population 649,320, contains six of these, viz., St. Louis College of Physicians and Surgeons, American Medical College, the School of Medicine of St. Louis University, Washington University Medical Department, Barnes Medical College and the Hippocratean College of Medicine. Kansas City, which with Kansas City, Kan., has a total population of 260,288, has two colleges, namely: University Medical College and the Hahnemann Medical College of Kansas City. Ensworth Medical College is located in St. Joseph, population 118,004. The Department of Medicine of the University of Missouri is at Columbia, a town of 8,000 people.

Columbia

University of Missouri School of Medicine.—Organized at St. Louis in 1845; was discontinued in 1859, but was reorganized at Columbia in 1872. Teaching of the clinical years was suspended in 1909. The faculty includes 13 professors, 14 assistant professors, lecturers, etc., a total of 27. The course covers two years of nine months each. The candidate for entrance must present, beside the diploma from a recognized four-year high school, credentials of college work as follows: English, 6 hours; German, 6 hours; general zoology, 6 hours; general physics, 6 hours; inorganic chemistry, 6 hours. Beginning in September, 1910, the entrance requirements will be two years of college work, including the subjects specified. Total fees amount to about $70 each year. The Dean is Dr. C. M. Jackson. Total registration of students for 1908-9 was 47; graduates, 5. The next session begins Sept. 23, 1909, and ends June 9, 1910.

Kansas City

University Medical College of Kansas City, 911 East Tenth Street.—Organized in 1881 as the University of Kansas City Medical Department. The first class graduated in 1882. It was reorganized in 1888 under the present title. Its faculty comprises 47 professors and 19 lecturers and assistants, a total of 66. The course of study covers four years of thirty weeks each. The total fees for each year are $100; graduation fee, $25. The Dean is Dr. J. M. Frankenburger. The total registration for 1908-9 was 164; graduates, 47. The twenty-eighth session begins Sept. 8, 1909, and ends May 13, 1910.

Kansas City Hahnemann Medical College, 1020 East Tenth Street.—Organized in 1888 as the Kansas City Homeopathic Medical College. The first class graduated in 1899. In 1902 it united with the Hahnemann Medical College of the Kansas City University, taking the present title. The Dean is Dr. William E. Cramer. Total registration for 1908-9 was 46; graduates, 14.

St. Joseph

The Ensworth Medical College, Seventh and Jule Streets.—Organized in 1876 as the St. Joseph Hospital Medical College. In 1882 it merged with the College of Physicians and Surgeons to form the St. Joseph Medical College. In 1888 changed name to Ensworth Medical College. In 1905 merged with the Central Medical College, organized in 1894, to form the Ensworth-Central Medical College. In 1907 the present title was resumed. The faculty numbers 34. The course covers four years of eight months each. The fees for the four years respectively are $90, $95, $75 and $95. The Secretary is Dr. T. E. Potter. Total registration for 1908-9 was 72; graduates, 24. The next session begins Sept. 20, 1909, and ends May 10, 1910.

St. Louis

Washington University Medical Department, 1806 Locust Street.—Organized in 1842 as the Medical Department of St. Louis University. In 1855 it was chartered as an independent institution under the name of St. Louis Medical College. The first class graduated in 1843. In 1891 it became the Medical Department of Washington University. In 1899 it absorbed the Missouri Medical College. The faculty comprises 48 professors, 51 lecturers and instructors, a total of 99. The course is four years of eight months each. The total fees for the four years are respectively $137.50, $132.25, $117.25 and $101.25. The Dean is William H. Warren, Ph.D. The total registration for 1908-9 was 201; graduates, 48. The next session begins Sept. 21, 1909, and ends June 2, 1910.

St. Louis University School of Medicine, Grand Avenue and Caroline Street.—Organized in 1901 by union of Marion-Sims Medical College, organized in 1890, and Beaumont Hospital Medical College, organized in 1886. It became the Medical Department of St. Louis University in 1903. The faculty is composed of 39 professors, 82 lecturers and assistants, a total of 121. The curriculum covers four years of eight months each. The total fees are $110 each year. The Dean is Dr. E. P. Lyon. The total registration for 1908-9 was 243; graduates, 47. The next session begins Oct. 1, 1909, and ends May 29, 1910.

St. Louis College of Physicians and Surgeons, Jefferson Avenue and Gamble Street.—Organized in 1869. Classes graduated in 1870 and in each subsequent year until 1873, when it suspended. It was reorganized in 1879. Classes graduated in 1880 and subsequent years. It has a faculty of 25 professors, 24 lecturers, instructors, etc., a total of 49. The course covers four years of seven months each. Total fees for each of the four years respectively are $105, $100, $100 and $105. The Dean is Dr. Waldo Briggs, 2600 Gamble Street. Total registration for 1908-9 was 224; graduates, 66. The next session begins Sept. 15, 1909, and ends May 6, 1910.

Barnes Medical College, Garrison and Lawton Avenues.—Organized in 1892. Classes graduated in 1893 and in all subsequent years, except 1899. The Secretary is Dr. C. M. Ament, 1025 Missouri Trust Building. Total registration for 1908-9 was 124; graduating class, 36.

American Medical College, Eclectic, 407 South Jefferson Avenue.—Organized in 1873. Two classes graduated each year from

1874 to 1883, inclusive. Since then one class has graduated each year. The Dean is Dr. J. J. Link. The total registration for 1908-9 was 28; graduates, 7. The next session begins Sept. 1, 1909, and ends May 4, 1910.

[illegible] OF MEDICINE, 3412 Morgan Street. A [illegible] in 1907. Its faculty numbers 28. During [illegible] s. The Dean is Dr. Emory Lanphear. The next session begins Sept. 6, 1909, and ends June 15, 1910.

NEBRASKA

Nebraska, population 1,068,484, has three medical colleges: The University of Nebraska College of Medicine and the John A. Creighton Medical College at Omaha, population 124,167, and the Lincoln Medical College at Lincoln, population 48,232.

Lincoln and Omaha

COLLEGE OF MEDIC[illegible] Eleventh and R Streets, Lincoln, and [illegible] Omaha.—Organized in 1881 as the C[illegible] first class graduated in 1882. It be[illegible] of Omaha University in 1891. In [illegible] University of Nebraska, with the present title. Two years of collegiate work are *required for admission. The first two years are given at Lincoln*; the last two at Omaha. The faculty is composed of 38 professors and 46 lecturers and instructors, total 84. The fees are approximately $100 *per annum. The total registration for* 1908-9 was 122; graduates, 9. The next session begins Sept. 21, 1909, and ends May 19, 1910.

Lincoln

LINCOLN MEDICAL COLLEGE. Eclectic. Corner 13th and P Streets. It is the Medical Department of Cotner University.—Organized in 1890. The first class graduated in 1891. The faculty numbers 44. The course of study covers four years of thirty-two weeks each. The total fees for the first year are $80; second and third, $75 each, and $85 for the fourth year, or $250 for all four years together. The Secretary is Dr. R. H. *Spradling*, 1315 O Street. The total registration for 1908-9 was 42; graduates, 9. The twentieth session begins Sept. 9, 1909, and ends June 9, 1910.

Omaha

JOHN A. CREIGHTON MEDICAL COLLEGE, Fourteenth and Davenport Streets. It is the Medical Department of Creighton University.—Organized in 1892. The first class graduated in 1895. It has a faculty of 35 professors and 16 associates, lecturers and assistants, a total of 51. Beginning in September, 1910, two years of work in a college of liberal arts will be required for admission. The course of study embraces four years of eight months each. The total fees for the four years respectively are $100, $100, $100 and $105. The Dean is Dr. D. C. Bryant, McCague Building. Total number of students registered in 1908-9 was 177; graduates, 30. The eighteenth session begins Sept. 1, 1909, and ends May 2, 1910.

NEW HAMPSHIRE

New Hampshire, population 432,624, has one medical college, located at Hanover, population 1,797.

Hanover

DARTMOUTH MEDICAL SCHOOL.—Organized as New Hampshire Medical Institute in 1797. The first class graduated in 1798. It is the Medical Department of Dartmouth College. The faculty is made up of 17 professors and 6 instructors, a total of 23. Beginning with the session of 1910-11 two years of collegiate work will be required for admission. The course covers four years of eight months each. The fees are $100 each year. The Dean is Dr. William T. Smith. The total registration for 1908-9 was 58; graduates, 14. The work of the first and second years begins with that of the academic department Sept. 24, 1909, and ends June 30, 1910; for the advanced classes the course begins Aug. 4, 1909, and ends March 26, 1910.

NEW YORK

New York State, population 8,226,990, has eleven medical colleges. Eight of these, College of Physicians and Surgeons (Columbia University), Long Island College Hospital, New York Homeopathic Medical College and Hospital, New York Medical College and Hospital for Women, Eclectic Medical College of the City of New York, Cornell University Medical College, the University and Bellevue Hospital Medical College, and Fordham University School of Medicine, are located in New York City, population 4,113,043. Albany Medical College is located in Albany, *a city of* 98,537 *people*. The University of Buffalo Medical Department is situated in Buffalo, population of 381,819. The College of Medicine, Syracuse University, is in Syracuse, *a city of* 118,880 inhabitants.

Albany

ALBANY MEDICAL COLLEGE, Lancaster and Jay Streets.—Organized in 1838. The first class graduated in 1839. It became the Medical Department of Union University in 1873. The faculty is composed of 17 professors and 48 lecturers, assistants, etc., a total of 65. The curriculum covers four years of eight months each. Fees: First year, $130; second year, $145; third year, $120, and fourth year, $130. The Registrar is Dr. Willis G. Tucker. The total registration for 1908-9 was 180; graduates, 37. The seventy-ninth session begins Sept. 21, 1909, and ends May 17, 1910.

Buffalo

UNIVERSITY OF BUFFALO MEDICAL DEPARTMENT, High Street, near Main.—Organized in 1846. The first class graduated in 1847. It absorbed the Medical Department of Niagara University in 1898. The faculty is composed of 38 professors and 59 lecturers, assistants, etc., a total of 97. The course covers four years of eight months each. The total fees for the four years respectively are $185, $180, $140 and $140. The Dean is Dr. Matthew D. Mann, 37 Allen Street. Total registration for 1908-9 was 185; graduates, 34. The sixty-fourth session begins Sept. 27, 1909, and ends May 27, 1910.

New York

COLLEGE OF PHYSICIANS AND SURGEONS IN THE CITY OF NEW YORK, 437 West Fifty-ninth Street.—Organized in 1807 by the regents of the University of the State of New York as their medical department. The first class graduated in 1811. *Affiliated* with Columbia College in 1814 and was permanently connected in 1860, when it became the Medical Department of Columbia College. That institution became Columbia University in 1891. The faculty is composed of 48 professors and 115 instructors, demonstrators, etc., *a total of* 163. *Beginning in 1910 the entrance requirements will* be two years of collegiate work including courses in physics, chemistry and biology. The work covers four years of eight months each. The Dean is Dr. Samuel W. Lambert. The total fees for the first year are $255; for the second and third, $250, *and* $275 for the fourth year. Total registration for 1908-9 was 312; graduates, 82. The 102d session begins Sept. 22, 1909, and ends June 1, 1910.

CORNELL UNIVERSITY MEDICAL COLLEGE, Ithaca, and First Ave*nue and Twenty-eighth Street, New York.—Organized in* 1898. The *first* class was graduated in 1899. The work of the first two years may be taken either in Ithaca or New York. The faculty is composed of 54 professors and 113 assistants, lecturers, instructors, etc., a total of 167. All candidates for admission must be graduates of approved colleges or scientific schools and in addition must have such knowledge of physics and inorganic chemistry as may be obtained in college by a year's course in these subjects when accompanied by laboratory work; in and after 1910 a similar *knowledge of biology will* be required. Fees: *First year,* $190; second and third, $185 each, and $200 for the fourth year. The Dean is Dr. William M. Polk. Total registration for 1908-9 was 217; graduates, 54. The twelfth session begins Sept. 29, 1909, and ends June 15, *1910*.

ECLECTIC MEDICAL COLLEGE OF THE CITY OF NEW YORK, 239 East Fourteenth Street.—Organized in 1865. The first class graduated in 1867. The Dean is Dr. George W. Boskowitz. Total registration for 1908-9 was 96; graduates, 9.

FORDHAM UNIVERSITY SCHOOL OF MEDICINE, Third and Pelham Avenues.—Organized in 1905. First class graduated in 1909. The faculty consists of 43 professors and 30 lecturers and assistants, a total of 73. The course of instruction covers four years of eight months each. Fees: First year, $195; second and third years, $190 each; fourth year, $180. A year's work in a recognized college of liberal arts is required *for* admission. The Dean is Dr. James J. Walsh. The total registration for 1908-9 was 43; graduates, 1. The fifth session begins Sept. 30, 1909, and ends May 23, *1910*.

LONG ISLAND COLLEGE HOSPITAL, Henry Street, near Atlantic Avenue, Brooklyn.—Organized in 1858. The first class graduated in 1860. It has a faculty of 9 professors and 98 assistants, instructors, etc., a total of 107. The course covers four years of thirty weeks each. Fees: First year, $200; second, $200; third, $160, and $195 for the fourth year. The Secretary is Dr. Joseph H. Raymond. Total registration, 1908-9, was 364; graduates, 75. The fifty-second session begins Sept. 29, 1909, and ends June 1, 1910.

NEW YORK HOMEOPATHIC MEDICAL COLLEGE AND HOSPITAL, Eastern Boulevard, between Sixty-third and Sixty-fourth Streets.—Organized in 1858. Incorporated in 1860 as the Homeopathic Medical College for the State of New York. The present title was assumed in 1869. The first class graduated in 1861. The Dean is Dr. Royal S. Copeland. Total registration for 1908-9 was 109; graduates, 16.

NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN, 17-19 West *One* Hundred and *First* Street.—Organized in 1863. The *first class graduated in 1864. The Dean is Dr. Helen Cooley Palmer*. The total registration for 1908-9 was 24; graduates, 4.

UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE, First Avenue and Twenty-sixth Street.—Organized in 1898 by the union of the New York University Medical College, organized in 1841, and the Bellevue Hospital Medical College, organized in 1861. It is the Medical Department of New York University. The faculty is composed of 33 professors and 90 instructors, etc., in all 123. The course covers four years of eight months each. The fees are $200 per year. The Dean is Dr. Egbert Le Fevre. Total registration for 1908-9 was 445; graduates, 74. The twelfth session begins Sept. 29, 1909, and ends June 1, 1910.

Syracuse

SYRA[illegible] OF MEDICINE, 307-311 Orange Street.-[illegible] College of Physicians and Surgeons [illegible] he present title was assumed in 1875. [illegible] 'ollege was merged with it. The first cl[illegible] The faculty is composed of 15 profess[illegible] essors, lecturers and instructors, in all 57. The course covers four years of eight months each. The completion of one year in an accredited college of liberal arts is required for admission. Beginning September 1910 two years of such college work will be required for admission. The average total fees for each year are $172.25. The Dean is Dr. John L. Heffron. The total registration for 1908-9 was 149; graduates, 33. The thirty-eighth session begins Oct. 5, 1909, and ends June 8, 1910.

NORTH CAROLINA

North Carolina, population, 2,059,326, has four medical schools, one of which gives only the first two years of the *medical course. The Medical Department of the University of* North Carolina is located at Chapel Hill, population 1,100, and at Raleigh, population 14,225. The Leonard School of Medicine is at Raleigh. The North Carolina Medical College is at Charlotte, population 22,009. Wake Forest School of Medicine is at Wake Forest, population 823.

Chapel Hill and Raleigh

University of North Carolina Medical Department.—Organized in 1890. Until 1902 this school gave only the work of the first two years, when the course was extended to four years by the establishment of a department at Raleigh. The first class graduated in 1903. The faculty is composed of 22 professors and 23 lecturers, assistants, etc., a total of 45. The total fees for the four years respectively are $114, $116, $75 and $80. The Dean of the Department at Chapel Hill is Dr. G. H. Manning; at Raleigh, Dr. H. A. Royster. The total registration for 1908-9 was 113; graduates, 12. The twentieth session begins Sept. 6, 1909, and ends June 1, 1910.

Charlotte

North Carolina Medical College, Church and Sixth Streets.—Organized in 1887 at Davidson as the Davidson School of Medicine. It was a preparatory school only, not granting any degrees until 1893, when it was chartered under its present name. The first class was graduated in 1893. Removed to Charlotte in 1907. The faculty numbers 29. The course covers four years of eight months each. Fees: First three years, $85 each, and $100 for the fourth year. The Dean is Dr. Walter O. Nisbet. The total registration for 1908-9 was 94; graduates, 17. The next session begins Sept. 8, 1909, and ends April 30, 1910.

Raleigh

Leonard Medical School.—Colored. This department of Shaw University was established in 1882. Classes were graduated in 1886, 1888 and in all subsequent years. It has a faculty of 10. The course covers four years of seven months each. The total fees for each year a [illegible], $10. The Dean is Dr. James McKee. Total [illegible] was 125; graduates, 22. The 28th session be[illegible]d ends May 12, 1910.

Wake Forest

Wake Forest College School of Medicine.—This school was organized in 1902. The faculty numbers 10. It only gives the first two years of the medical course, which constitute a part of the course for the B.S. degree. Each annual course extends over nine months. The fees are $100 each year. The Dean is Dr. John Brewer Powers. The total registration for 1908-9 was 53. The eighth session begins Sept. 6, 1909, and ends May 25, 1910.

NORTH DAKOTA

North Dakota, population 383,226, has one medical college, the College of Medicine of the State University of North Dakota, which is situated at University near Grand Forks.

University

University of North Dakota College of Medicine.—Organized in 1905. The faculty is composed of 9 professors and 7 instructors, a total of 16. The course consists of two years' academic work and two years of medical college subjects, occupying nine months each year. The total fees for each of the medical years are $50. The Dean is M. A. Brannon, A.M. The total registration for 1908-9 was 22. The fifth session begins Sept. 21, 1909, and ends June 16, 1910.

OHIO

Ohio, population 4,448,677, has eight medical colleges. Three of these, the Ohio-Miami Medical College of the University of Cincinnati, the Eclectic Medical Institute, and Pulte Medical College, are located in Cincinnati, a city of 345,230 inhabitants. Cleveland, population 460,327, contains three medical schools: Western Reserve University Medical College, Cleveland College of Physicians and Surgeons and the Cleveland Homeopathic Medical College. Columbus, population 145,414, contains one medical college, the Starling-Ohio Medical College. Toledo, with 159,980 people, has one medical school, the *Toledo Medical College.*

Cincinnati

The Ohio-Miami Medical College of the University of Cincinnati.—Organized in 1909 by the union of the Ohio Medical College (founded in 1819) with the Miami Medical College (founded in 1852). The Ohio Medical College became the Medical Department of the University of Cincinnati, April 26, 1896. Under a similar agreement, March 2, 1909, Miami Medical College also merged into the University when the present title was taken. The agreement gave the university entire control and both colleges turned over all their property to the City of Cincinnati for the University and gave up their own corporate existence. The faculty now consists of 50 professors, 13 associate and assistant professors, and 65 lecturers, instructors, etc., a total of 128. The course covers four years of eight months each. The fees are a tuition fee of $125 a year; a matriculation fee of $5, payable but once, and a graduation fee of $25. The Secretary is Dr. E. Otis Smith. The next session begins Sept. 27, 1909, and ends June 4, 1910.

Eclectic Medical Institute, 1009 Plum Street.—Organized in 1832 at Worthington as the Worthington Medical College. Removed to Cincinnati in 1843. In 1845 it was chartered under its present title. In 1857 the American Medical College, organized in 1839, was merged into it, and in 1859 the Eclectic College of Medicine and Surgery, organized in 1856, merged into it. Classes were graduated in 1833 and in all subsequent years except 1839 to 1843 inclusive. It has a faculty of 19 professors and 6 lecturers and assistants, a total of 25. The course covers four years of thirty weeks each. The fees are $90 for each year. The Dean is Dr. Rolla L. Thomas, 792 East McMillan Street. Total registration for 1908-9 was 81; graduates, 16. The next session begins Sept. 20, 1909, and ends May 4, 1910.

Pulte Medical College. Homeopathic. Mound and Seventh Streets.—Organized in 1872. The first class graduated in 1873. The faculty numbers 37. The fees for each of the four years are respectively $85, $82, $75 and $100. The Dean is Dr. Charles E. Walton. Total enrolment for 1908-9 was 16; graduates, 3. The 38th session begins Sept. 30, 1909, and ends May 25, 1910.

Cleveland

The Cleveland College of Physicians and Surgeons, Central Avenue and East Fourteenth Street.—Organized in 1863 as Charity Hospital Medical College, became the Medical Department of Wooster University in 1869 and the Medical Department of the Ohio Wesleyan University in 1896, when it assumed its present title. Classes were graduated in 1865 and in all subsequent years except 1881. The faculty is composed of 33 professors, 28 lecturers, assistants, etc., 61 in all. The total fees for the four years respectively are $130, $130, $117 and $110. The curriculum covers four years of eight months each. The Dean is Dr. R. E. Skeel, 314 The Osborn. Total registration for 1908-9 was 92; graduates, 16. The next session begins Oct. 1, 1909, and ends June 1, 1910.

Cleveland Homeopathic Medical College, Prospect Avenue and Huron Road.—Organized in 1849 as the Western College of Homeopathic Medicine. The first class graduated in 1853. In 1857 it became the Western Homeopathic College and in 1870 it became the Homeopathic Hospital College when the Homeopathic Medical College for Women, organized in 1868, merged into it. In 1894 it became the Cleveland University of Medicine and Surgery, which in 1898 merged with the Cleveland Medical College, organized in 1890, taking the present title. The Dean is Dr. George H. Quay. Total number of students registered in 1908-9 was 41; graduates, 13.

Western Reserve University, Medical Department, St. Clair Avenue and East Ninth Street.—*Organized in 1843 as the Cleveland* Medical College. The first class graduated in 1845. It assumed *the present title in 1881.* The faculty includes 24 professors and 74 lecturers, assistants, etc., a total of 98. The curriculum embraces four years of eight and one-half months each. Three years of college work are required for admission to first year of medical course. The total fees are $125 for each year. The Dean is Dr. B. L. Millikin, 1110 Euclid Avenue. The total registration for 1908-9 was 98; graduates, 25. The 67th session begins Oct. 1, 1909, and ends June 16, 1910.

Columbus

Starling-Ohio Medical College, Buttles Avenue and Park Street.—Organized in 1907 by the union of Starling Medical College (organized 1834) with the Ohio Medical University (organized 1890). The faculty consists of 35 professors and 22 lecturers, demonstrators, etc., a total of 57. The course covers four years of eight months each. Total fees for the four years respectively are $115, $110, $105 and $125. The Dean is Dr. George M. Waters. The total registration for 1908-9 was 231; graduates, 50. The next session begins Sept. 22, 1909, and ends May 17, 1910.

Toledo

Toledo Medical College, Cherry and Page Streets.—Organized in 1883. The first class graduated in 1883. The faculty numbers 50. The curriculum embraces four years of eight months each. The fees are $100 for each year, with a matriculation fee of $5, payable once. The Dean is Dr. James Donnelly. The total registration for 1908-9 was 38; graduates, 5. The next session begins Oct. 1, 1909, and ends May 26, 1910.

OKLAHOMA

Oklahoma, population 1,109,435, has two medical schools, the School of Medicine of the University of Oklahoma, which is located at Norman, a city of 3,800 inhabitants, and the Epworth College of Medicine, located at Oklahoma City, which has a population of 20,990.

Norman

State University of Oklahoma School of Medicine.—Organized in 1898. Gives only the first two years of the medical course and does not grant degrees. The session extends over a period of nine months. The faculty numbers 9. Students are advised to take two or more years of collegiate premedical studies. The two years of the medical course may be used as the junior and senior years in the college of arts and sciences leading to degree of B.A. or B.S The Dean is Dr. C. S. Bobo. The total registration for 1908-9 was 10. The next session begins Sept. 14, 1909, and ends June 9, 1910.

Oklahoma City

Epworth College of Medicine.—Organized in 1904. The first class graduated in 1907. The faculty numbers 43. The course of study covers four years of seven and a half months each. The total fees are $100 each year. The Dean is Dr. A. K. West. The registration for 1908-9 was 51; graduates, 6. The sixth session begins Oct. 1, 1909, and ends May 9, 1910.

OREGON

Oregon, population 474,738, has two medical colleges: The Medical Department of Willamette University, located in Salem, a city of 7,287 people, and the University of Oregon Medical Department, in Portland, a city of 109,884 population.

Portland

University of Oregon, Medical Department. Lovejoy and Twenty-third Streets.—Organized in 1887. The first class graduated in 1888. It has a faculty of 14 professors and 27 lecturers, assistants, etc., a total of 41. The course is four years of seven and one-half months each. Fees: First year, $142.50; second, $137.50; third, $107.50, and for the fourth, $57.50. The Dean is Dr. Simeon E. Josephi. The total registration for 1908-9 was 74; graduates, 15. The 23d session begins Sept. 13, 1909, and ends May 2, 1910.

Salem

Medical Department Willamette University.—Organized in 1865 at Salem. Classes were graduated in 1867 and in all subsequent years except 1896. It moved to Portland in 1878, but returned to Salem in 1895. The Dean is Dr. W. H. Byrd. The total registration for the college year 1908-9 was 29; graduates, 8. The next sesion begins Oct. 5, 1909, and ends May 29, 1910.

PENNSYLVANIA

Pennsylvania, population 6,928,515, has seven medical colleges. Of these Philadelphia, having a population of 1,441,735, contains six, as follows: University of Pennsylvania, Department of Medicine, Jefferson Medical College, Hahnemann Medical College, Woman's Medical College of Pennsylvania, Medico-Chirurgical College of Philadelphia and Temple University Department of Medicine. The other school, the Western Pennsylvania Medical College, is situated in Pittsburgh, a city of 375.082 people.

Philadelphia

University of Pennsylvania, Department of Medicine. Thirty-sixth Street and Hamilton Walk.—Organized in 1765. Classe [illegible] 68 and in all subsequent years except 1772-7 [illegible] al title was the Department of Medicine, [illegible] which was changed to the present title [illegible] the first medical diploma issued in Ameri [illegible] de up of 27 professors, 3 associate professors, 4 adjunct professors, 11 assistant professors, 111 demonstrators, lecturers, associates, instructors, etc., a total of 156. The requirements for admission for the session of 1909-10 will be the equivalent of work prescribed for freshmen in recognized colleges, which work must include a knowledge of physics, chemistry and general biology or zoology with laboratory work as specified by the College Entrance Examining Board and, in addition, two foreign languages, one of which must be French or German. The course embraces study of four years of nine months each. The total fees for each year are $200, with a matriculation fee of $5 for the first year. The Dean is Dr. Charles H. Frazier. Total registration for 1908-9 was 544; graduates, 110. The next session begins Sept. 24, 1909, and ends June 15, 1910.

Jefferson Medical College. Tenth and Walnut Streets.—Organized 1825 as the Medical Department of Jefferson College, Cannonsburg. The first class graduated in 1826. The present title was assumed in 1838. It has a faculty of 22 professors and 98 lecturers, demonstrators, etc., a total of 120. The course of study covers graded work of four years of eight months each. An optional fifth year is offered. The tuition is $180 a year, with a matriculation fee of $5, paid but once. The Dean is Dr. James W. Holland. The total registration for 1908-9 was 591; graduates, 139. The 85th session begins Sept. 24, 1909, and ends June 6, 1910.

Medico-Chirurgical College of Philadelphia. Cherry Street, between Seventeenth and Eighteenth Streets.—Organized in 1881. The first class graduated in 1882. The faculty is composed of 31 professors and 64 lecturers, assistants, etc., a total of 95. The work embraces four years of eight months each. An optional preliminary year devoted to physics, chemistry and biology is offered. Fees, $150 per year; matriculation, $5, payable once. The Dean is Dr. Seneca Egbert. The total registration for the college year 1908-9 was 461; graduates, 56. The 29th session begins Sept. 24, 1909, and ends June 6, 1910.

Woman's Medical College of Pennsylvania. Twenty-first and N. College Avenue.—Organized in 1850. Classes were graduated in 1851 and in all subsequent years except 1861 and 1862. It has a faculty of 10 professors and 47 assistants, lecturers, etc., in all 57. The curriculum covers four years of eight months each. Fees, $140 each year. The Dean is Dr. Clara Marshall. The total registration for 1908-9 was 125; graduates, 24. The 60th session begins Sept. 22, 1909, and ends June 1, 1910.

Hahnemann Medical College and [illegible] Organized in 1848 as the Homeopathic Medical Colle [illegible] In 1869 it united with the Hahnemann Me [illegible] phia, taking the present title. The first class graduated in 1849. It has a faculty of 27 professors and 46 lecturers, instructors, etc., in all 73. The work covers four years of eight months each. Fees: For each year, $150; matriculation, $5. The Dean is Dr. Herbert L. Northrop. The total registration for the college year 1908-9 was 187; graduates, 58. The 62d session begins Sept. 27, 1909, and ends June 1, 1910.

The Temple University, De [illegible] Eighteenth and Buttonwood Streets.—Org [illegible] first class graduated in 1904. The facult [illegible] a four-year day course. The fees are $1 [illegible] n is Dr. I. Newton Snively. The total [illegible] was 245; graduates, 18. The 9th sessio [illegible] 9, and ends June 4, 1910.

Pittsburgh

University of Pittsburgh, Medical [illegible] Avenue and Thirtieth Street.—Organized [illegible] Pennsylvania Medical College. Became t [illegible] of the University of Pittsburgh in 1909. The first class graduated in 1887. The faculty is composed of 40 professors and 80 associates, assistants, etc., 120 in all. The course of study embraces four years of nine months each. The total fees are $150 for each year. The Dean is Dr. Thomas S. Arbuthnot. The total registration for 1908-9 was 378; graduates, 56. The 26th session begins Oct. 5, 1909, and ends June 15, 1910.

PHILLIPPINE ISLANDS

Manila

University of St. Thomas. Medical Department.—The University was founded by a papal decree in 1587, and the medical school was added in 1771. The faculty numbers 154. The course extends over a period of six years of nine months each. The first year is a preparatory one, devoted to the teaching of physics, chemistry and biology. The degree of licenciado is conferred at the conclusion of the fifth year, and the degree of doctorado at the end of the sixth year, during which only special work is done. This last year is optional, the degree of licenciado entitling the holder to all the rights and privileges of the medical practitioner. The degree is equivalent to the English M.B. The Rector of the university is Dr. Fr. Raymundo Vetasquez; the Secretary of the Medical Department is Lic. Blas C. Alcuaz.

Philippine Medical College.—Organized in 1907 under the support of the Philippine Commission. The faculty numbers 42. The course extends over five years of thirty-five weeks each. The requirements for admission conform to the standards in the United States and Great Britain. The Secretary is Dr. Harry T. Marshall. The total registration for 1908 was 52; graduates, 8. The third session began June 7, 1909, and will end Feb. 26, 1910.

SOUTH CAROLINA

South Carolina, population 1,453,318, has one medical college, situated in Charleston, a city of 56,317 people.

Charleston

The Medical College of the State of South Carolina.—Founded in 1823 as the Medical College of South Carolina. In 1832 it was chartered with the present title. Classes were graduated in 1825 and in all subsequent years except 1861 to 1865 inclusive. It has a faculty of 11 professors and 20 lecturers, instructors, etc., a total of 31. The course covers four years of seven months each. The total fees for each of the first two years are $100, and $75 each for the last two. The Dean is Dr. Robert Wilson. Total enrolment for 1908-9 was 213; graduates, 38. The 87th session begins Oct. 1, 1909, and ends May 4, 1910.

SOUTH DAKOTA

South Dakota, population 465,908, has one medical college, the University of South Dakota, College of Medicine, located at Vermilion, a city of 2,183 people.

Vermilion

University of South Dakota, College of Medicine.—Organized in 1907. Offers only the first two years of the medical course. Two years of work in a college of liberal arts is required for admission. The faculty numbers 8. The Dean is Christian P. Lommen, B. S. The total registration for 1908-9 was 11. The third session begins Sept. 13, 1909, and ends June 9, 1910.

TENNESSEE

Tennessee, population 2,172,476, has nine medical colleges. Of these Vanderbilt University Medical Department, the Medical Department of the Universities of Nashville and Tennessee and Meharry Medical College are situated in Nashville, a city with a population of 84,703. Knoxville, population 36,051, contains two colleges, Tennessee Medical College and Knoxville Medical College. Chattanooga Medical College is situated in Chattanooga, a city of 34,297 people. Memphis Hospital Medical College, the College of Physicians and Surgeons and the University of West Tennessee are located in Memphis, population 125,235.

Chattanooga

Chattanooga Medical College.—McCallie and Baldwin Streets. Organized in 1889. The first class [illegible] 's the Medical Department of the Universi [illegible] culty consists of 11 professors and 13 [illegible] etc., total 24. The course covers fou [illegible] each. The total fees approximate $75 eac [illegible] J. R. Rathmell. The total registration for 1908-9 was 112; graduates, 24. The twenty-first session begins Sept. 22, 1909, and ends May 2, 1910.

Knoxville

Tennessee Medical College, Medical Department of Lincoln Memorial University. Cleveland Street and Dameron Avenue.—Organized in 1889. The first class graduated in 1890. It has a faculty of 20 professors and 7 assistants, a total of 27. The curriculum covers four years of seven months each. Fees: First and second years, $50; third and fourth years, $60; matriculation fee, $5; graduation fee, $25. The Registrar is Dr. E. R. Zemp. The total registration for 1908-9 was 84; graduates, 13. The 20th session begins Oct. 1, 1909, and ends May 1, 1910.

Knoxville Medical College. Colored. Clinton and McGhee Streets. Organized in 1900. Classes were graduated in 1900 and in all subsequent years except 1906 and 1907. The Secretary is Dr. H. M. Green, Famous Building. There were 23 students and 7 graduates for the session of 1908-9.

Memphis

College of Physicians and Surg [illegible] Hospital. Organized in 1906. The first class [illegible] It has a faculty of 45. The course covers [illegible] months each. The Dean is Dr. Heber Jones. The total registration for 1908-9 was 84; graduates, 11. The 4th session begins Sept. 15, 1909, and ends May 1, 1910.

Memphis Hospital Medical College. Marshall Avenue and Myrtle Street.—Organized in 1880. The first class graduated in 1881. It has a faculty of 11 professors and 23 lecturers, instructors, etc., a total of 34. The course covers four years of seven months each. The total fees for the first three years are

$75; for the fourth $100. The Dean is Dr. W. B. Rogers. Total registration for 1908-9 was 442; graduates, 98. The 30th annual session will begin Oct. 1, 1909 and close May 1, 1910.

Medical Department of the University of West Tennessee. Colored, 1190 South Phillips Place.—Organized in 1900. It has a faculty of 18. The course is four years of seven months each. The fees are $40 [illegible] $10 extra. The Dean is Dr. M. V. Lynk. [illegible] was 25; graduates, 8. The next session be[illegible] [illegible] ends April 14, 1910.

Nashville

Vanderbilt University, Medical Department. Elm Street and Fifth Avenue.—This school was founded in 1874. The first class graduated in 1875. The present faculty of 39 consists of 19 professors and 20 lecturers. The course covers four years of seven and a half months each. The total fees for each of the first three years are $130 and for the fourth year $155. The Dean is Dr. William L. Dudley. The total registration for 1908-9 was 209; graduates, 49. The 36th session begins Sept. 16, 1909, and ends May 2, 1910.

Universities of Nashville and Tennessee, Medical Department.—Organized in 1909 by the union of the University of Nashville, Medical Department (founded in 1850) with the University of Tennessee, Department of Medicine (founded in 1876). The new college has a faculty of 50. The course will cover four years of thirty-two weeks each. The total fees will be $125 for each of the first three years and $150 for the fourth year. The Dean is Dr. R. O. Tucker. The total registration of the two schools for 1908-9 was 347; graduates, 102. The first session of the new school will begin Sept. 8, 1909, and will end May 2, 1910.

Meharry Medical College. Colored. Maple and Chestnut Streets.—This school was organized in 1876 and is the Medical Department of Walden University. The faculty is made up of 12 professors and 14 instructors, demonstrators, etc., 26 in all. The work embraces four years of seven months each. The total fees are for the first year, $53; second and third years, $55 each, and $60 for the fourth year. The Dean is Dr. G. W. Hubbard. Total registration for 1908-9 was 275; graduates, 58. The 34th session begins Sept. 15, 1909, and ends April 14, 1910.

TEXAS

Texas, population 3,536,618, has four medical colleges. The University of Texas Department of Medicine is located at Galveston, a city of 34,355 inhabitants. The Medical Department of Fort Worth University is at Fort Worth, population 27,096. The Baylor University College of Medicine and the Medical Department of Southwestern University are situated in Dallas, population 52,793.

Dallas

Baylor University College of Medicine, 435-37 South Ervay Street.—Organized in 1900 as the University of Dallas, Medical Department. In 1903 it took its present name and became the Medical Department of Baylor University at Waco. It acquired the charter of Dallas Medical College in 1904. The first class graduated in 1901. The Dean is Dr. E. H. Cary. Total registration for 1908-9 was 53; graduates, 16. The 10th session begins Oct. 1, 1909, and ends May 1, 1910.

Southwestern University Medical College.—Organized in 1903. The first class graduated in 1904. It has a faculty of 17 professors and 15 instructors, total 32. The course of instruction covers four years. The fees for the four years respectively are $110, $105, $100 and $125. The Dean is Dr. John O. McReynolds. Total registration for 1908-9 was 68; graduates, 9. The 7th session begins Sept. 29, 1909, and ends April 29, 1910.

Fort Worth

Medical Department of Fort Worth University. Calhoun and Fifth Streets.—Organized in 1894. The first class graduated in 1895. It has a faculty of 16 professors and 22 lecturers, assistants, etc., in all 38. The course covers four years of seven months each. The total fees for each of the first three years are $105 and $130 for the fourth year. The Dean is Dr. W. R. Thompson. The total registration for the college year 1908-9 was 100; graduates, 19. The sixteenth session begins Sept. 27, 1909, and ends May 13, 1910.

Galveston

University of Texas, Department of Medicine. Avenue B and Ninth Street.—Organized in 1891. The first class graduated in 1892. It has a faculty of 10 professors and 15 lecturers. The curriculum embraces four years of eight months each. The total fees for the four years respectively are $55, $30, $20 and $5. The Dean is Dr. William S. Carter. Total registration for 1908-9 was 211; graduates, 37. The 19th session begins Oct. 1, 1909, and ends May 31, 1910.

UTAH

Utah, population 316,331, has one medical college, the Medical Department of the University of Utah, situated at Salt Lake City, which has 61,202 people.

Salt Lake City

University of Utah, Department of Medicine.—Organized in 1906. Gives only the first two years of the medical course. Each course covers thirty-six weeks. One year of collegiate work is required for admission. In 1910 and thereafter the requirement will be two years of collegiate work. The medical faculty consists of 6 professors and 15 lecturers and assistants, a total of 21. The fees are $65 each year. The Dean is Byron Cummings, A.M. Total registration for 1908-9 was 18. The third session begins Sept. 16, 1909, and ends June 1, 1910.

VERMONT

Vermont, population 350,373, has one medical school, located at Burlington, a town of 21,070 people.

Burlington

University of Vermont College of Medicine. Pearl Street, College Park.—Organized with complete course in 1822. Classes graduated in 1823 to 1836, inclusive, when the school was suspended. It was reorganized in 1853 and classes were graduated in 1854 and in all subsequent years. The faculty numbers 46. The course of study covers four years of seven months each. The total fees for each of the first three years are $115 and $140 for the fourth year. The Dean is Dr. H. C. Tinkham; Secretary, Dr. James N. Jenne. The total registration for the college year 1908-9 was 166; graduates, 33. The next session begins Nov. 11, 1909, and ends June 24, 1910.

VIRGINIA

Virginia, population 1,973,104, has three medical colleges, one, the Medical Department of the University of Virginia, situated in Charlottesville, population 6,449, and two, the Medical College of Virginia and the University College of Medicine, in Richmond, population 87,246.

Charlottesville

University of Virginia, Department of Medicine.—Organized in 1827. Classes were graduated in 1828 and in all subsequent years, except 1865. It has a faculty of 17 professors and 15 lecturers, instructors, assistants, etc., a total of 32. The requirements for admission are the completion of a three years' high school course, or its equivalent, and a year of college work devoted to chemistry, physics and biology. Fees: First year, $150; second year, $140; third year, $120; fourth year, $100. The Dean is Dr. R. H. Whitehead. The total registration for 1908-9 was 88; graduates, 18. The next session begins Sept. 16, 1909, and ends June 15, 1910.

Richmond

Medical College of Virginia. Marshall and College Streets.—Organized in 1838 as the Medical Department of Hampden Sydney College. Present title was taken in 1854. Classes were graduated in 1840 and in all subsequent years. It has a faculty of 16 professors and 32 lecturers, instructors, etc., a total of 48. The requirement for admission is a full four-year high school education. The course embraces four years of eight months each. Fees, $100 each year; graduation fee, $30. The Dean is Dr. Christopher Tompkins. The total registration for the college year 1908-9 was 206; graduates, 35. The 72d session begins Sept. 14, 1909, and ends May 18, 1910.

University College of Medicine. Eleventh and Clay Streets.—Organized in 1893. The first class graduated in 1894. It has a faculty of 23 professors, 52 lecturers, assistants, etc., a total of 75. The curriculum covers four years of eight months each. The total fees are $100 for each year. The President is Dr. Stuart McGuire; the Dean is Dr. A. L. Gray. The total registration for the college year 1908-9 was 140; graduates, 42. The seventeenth session begins Sept. 14, 1909, and ends May 17, 1910.

WEST VIRGINIA

West Virginia, population 1,076,406, has one medical college, College of Medicine of the West Virginia University, located at Morgantown, a city of 3,900 inhabitants.

Morgantown

West Virginia University College of Medicine.—Organized in 1902. Gives only the first two years of the medical course. Each college term extends over nine months. The faculty consists of 8 professors and 5 assistants, 13 in all. Tuition to students residing in the state, $25; for others, $50 per year. The Dean is Dr. J. N. Simpson. The total registration for the college year 1908-9 was 40. The eighth session begins Sept. 20, 1909, and ends June 15, 1910.

WISCONSIN

Wisconsin, population 2,260,930, has three medical colleges, the Medical Department of the University of Wisconsin, which teaches the first two years of the medical course, and is located at Madison, a city having a population of 25,128, and the Milwaukee Medical College and Wisconsin College of Physicians and Surgeons, situated in Milwaukee, a city of 317,903 people.

Madison

University of Wisconsin College of Medicine.—Organized in 1907. Gives only the first two years of the medical course. For matriculation a candidate must have had in addition to a four-year high school course at least two years in a college of arts and science or an equivalent training. Two years of Latin, a reading knowledge of French and German, and at least a year's work in physics, chemistry and biology are specifically required. It has a faculty of 25 professors and 20 lecturers, instructors, etc., a total of 45. The Dean is Dr. Charles R. Bardeen. The registration for 1908-9 was 32. The 2d session begins Sept. 27, 1909, and ends June 22, 1910.

Milwaukee

Milwaukee Medical College. Medical Department of Marquette University. Ninth and Wells Streets.—Organized in 1894. The first class graduated in 1895. It became the Medical Department of Marquette University in 1907. It has a faculty of 30 professors and 36 lecturers, instructors, etc., a total of 66. The course covers four years of eight months each. The total fees are $135 each for the first three years and $150 for the fourth year. The Dean is Dr. Warren B. Hill. The total registration for 1908-9 was 166; graduates, 23. The 16th session begins Oct. 5, 1909, and ends May 23, 1910.

Wisconsin College of Physicians and Surgeons, Fourth Street and Reservoir Avenue.—Organized in 1893. The first class graduated in 1894. It has a faculty of 25 professors and 28 lecturers, instructors, etc., a total of 53. The curriculum includes four years of eight months each. Fees: Matriculation, paid once, $5; general ticket, $125. The Dean is Dr. Thomas C. Phillips. The total registration for 1908-9 was 60; graduates, 15. The 18th session begins Oct. 1, 1909, and ends May 27, 1910.

CANADA

Manitoba

Manitoba Medical College, Winnipeg.—It is the Medical Faculty of the University of Manitoba. Organized 1883, first class graduated 1886 and a class graduated each subsequent year. The faculty numbers 40. The fees are $130 for the first year and $125 for each of the other four years. The entire course covers five years. The dean is Dr. H. H. Chown, 263 Broadway, Winnipeg. Total registration for 1908-9 was 115; graduates, 36. The next session begins Sept. 27, 1909, and ends May 1, 1910.

Nova Scotia

Halifax Medical College, Medical Faculty of Dalhousie University, Halifax.—Organized 1867 as Halifax School of Medicine, united same year with Dalhousie University, separately incorporated 1876, affiliated with Dalhousie University 1885, first class graduated 1872 and a class graduated each subsequent year except 1873 and 1886. The course covers four years. The Dean is Dr. George L. Sinclair. The Secretary is Dr. A. W. H. Lindsay. The total registration for 1908-9 was 61; graduates, 8. The next session begins Aug. 26, 1909, and ends Aprll 28, 1910.

Ontario

University of Toronto, Faculty of Medicine, Toronto.—Organized 1843 as the Medical Faculty of King's College. Abolished in 1853. Re-established in 1887. The course of study covers five years of eight months each. In 1902 it absorbed Victoria University and in 1903 it absorbed Trinity Medical College. The Dean is Dr. A. R. Reeve; Secretary, Dr. A. Primrose. The total registration for 1908-9 was 630; graduates, 90. The next session begins Oct. 1, 1909, and ends May 13, 1910.

Medical Faculty of Queen's University, Kingston.—Organized 1854, first class graduated in 1855, and a class graduated each subsequent year. The faculty was originally a department of the University, but a separation took place in 1866, when the school was conducted under the charter of the Royal College of Physicians and Surgeons at Kingston. In 1897 the school again became an integral part of Queen's University. The fees amount to $100 each year; fee for the M.D., C.M. degrees, $30. A five year medical course is required. The total registration in 1908-9 was 208; graduates, 40. The Dean is Dr. A. R. B. Williamson. The next session begins Sept. 29, 1909, and ends April 27, 1910.

Medical Department of Western University, London.—Organized in 1881, first class graduated in 1883 and a class graduated each year subsequently. The Registrar is Dr. W. E. Waugh. Total registration for 1908-9 was 104; graduates, 27. The next session begins Sept. 21, 1909, and ends May 1, 1910.

Quebec

Medical Faculty of McGill University.—Founded 1824 as Montreal Medical Institution; became the Medical Faculty of McGill University in 1829; first class graduated under the university auspices in 1833. No sessions between 1836-39 owing to political troubles. In 1905 absorbed Faculty of Medicine University of Bishop College. The course now extends over five years. The faculty numbers 95. Total registration for 1908-9 was 328; graduates, 71. The Registrar is Dr. John W. Scane. The next session begins Oct. 1, 1909, and ends June 8, 1910.

Laval University, Medic [illegible] bec and Montreal.—The Quebec school of [illegible] n 1848, became in 1852 Medical Department [illegible] first class graduated in 1855, and a class graduated each subsequent year. Department organized in Montreal in 1878. The course extends over five years. The Deans are Dr. Laurent Catellier, Quebec, and Dr. E. P. Lachapelle, Montreal.. Total registration at the two departments, 1908-9, was 309; graduates, 55. The next session begins Sept. 15, 1909, and ends June 20, 1910.

FOREIGN MEDICAL COLLEGES

ARGENTINE REPUBLIC

Buenos Ayres.—Universidad Nacional de Buenos Aires.
Cordova.—Universidad Nacional.

AUSTRALIA

Adelaide.—Universidad Nacional.
Melbourne.—University of Melbourne.
Sydney.—University of Sydney.

AUSTRIA

Gratz, Styria.—Kaiserliche Königliche Karl Franzens Universität.
Innsbruck, Tyrol.—Kais. König. Leopold Franzens Universität.
Krakow, Galicia.—Uniwersytet Jagiellonski w Krakowie.
Lemberg, Galicia.—C. K. Uniwersytet Imienia Cesarza Franciska I.
Prague, Bohemia.—K. K. Deutsche Karl-Ferdinand-Universität.
Prague, Bohemia.—C. K. Ceskâ Universita Karlo-Ferdinandova.
Vienna, Nether Austria.—Kaiserliche Königliche Universität.

BELGIUM

Brussels.—Université Libre de Bruxelles.
Ghent.—Université d l'Etat de Gand.
Liege.—Université de Liège.
Louvain.—Université Catholique.

BRAZIL

Bahia.—Faculdade de Medicina, Cirurgia e Pharmacia.
Rio de Janeiro.—Faculdade de Medicina, Cirurgia e Pharmacia.
Porto Allegre.—Faculdade Livre de Medicina e Pharmacia.

CANADA

Halifax, Nova Scotia.—Dalhousie University (including Halifax Medical College).
Kingston, Ontario.—Queen's University.
London, Ontario.—Western University.
Montreal, Quebec.—McGill University.
Montreal, Quebec.—Université Laval.
Quebec, Quebec.—Université Laval.
Toronto, Ontario.—University of Toronto.
Winnipeg, Manitoba.—University of Manitoba (Manitoba Medical College).

CHILE

Santiago.—Universidad de Chile.

CHINA

Hongkong.—Hongkong College of Medicine.
Pekin.—The Union Medical College.
Shanghai.—Woman's Medical School.

COLOMBIA

Bogota.—Universidad de Bogota.

CUBA

Havana.—Universidad de la Habana.

DENMARK

Copenhagen.—Kjobenhavns Universitet.

EGYPT

Cairo.—Kasr il Aini (School of Medicine).

ENGLAND

Birmingham.—University of Birmingham.
Bristol.—University of Bristol.
Cambridge.—University of Cambridge.
Durham.—Durham University (Durham College of Medicine).
Leeds.—University of Leeds.
Liverpool.—University of Liverpool.
London.—University of London (including the following Medical Schools: (*a*) St. Bartholomew's Hospital, (*b*) Charing Cross Hospital, (*c*) St. George's Hospital, (*d*) Guy's Hospital, (*e*) King's College, (*f*) London Hospital (*g*) St. Mary's Hospital, (*h*) Middlesex Hospital, (*i*) St. Thomas's Hospital, (*j*) University College (*k*) Westminster Hospital, and (*l*) London (Royal Free Hospital) School of Medicine for Women.
Manchester.—Victoria University (Owen's College, founded in 1851, was merged in Victoria University in 1905).
Oxford.—University of Oxford.
Sheffield.—University of Sheffield.

FRANCE

Faculties of Medicine (to the degree of doctor in medicine, including the five required examinations).
Bordeaux.—Université de Bordeaux.
Lille.—Université de Lille.
Lyons.—Université de Lyon.
Montpellier.—Université de Montpellier.
Nancy.—Université de Nancy.
Paris.—Université de Paris.
Toulouse.—Université de Toulouse.
Preparatory Schools of Medicine.—Graduates of the 16 following schools are allowed to take the first two examinations if they are presided over by some member of a medical faculty:
(*a*) *"Full Exercise,"* or complete course (covering the work of 16 trimesters).
Algiers (Africa).—Académie d'Alger.
Marseilles.—Université d'Aix-Marseille.
Nantes.—Ecole de Plein Exercice de Médicine et de Pharmacie (part of the University of Rennes).
Rennes.—Université de Rennes.
(*b*) *Reorganized Schools.*—(Completing the first 12 trimesters.)
Amiens.—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Lille).
Angers.—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Rennes).
Besancon.—Université de Besancon.
Caen.—Université de Caen.
Clermont.—Université de Clermont.
Dijon.—Université de Dijon.
Grenoble.—Université de Grenoble.
Limoges.—Ecole de Médicine et de Pharmacie (part of the University of Poitiers).
Poitiers.—Université de Poitiers.
Reims.—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Paris).
Rouen.—Ecole de Médicine et de Pharmacie (part of the University of Caen).
Tours.—Ecole Préparatoire de Médicine et de Pharmacie (part of the University of Poitiers).

GERMANY

Berlin, Prussia.—Königliche Friedrich-Wilhelm Universität.
Bonn, Prussia.—Rheinische Friedrich-Wilhelms-Universität.
Breslau, Prussia.—Königliche Universität.
Erlangen, Bavaria.—Königl, Friedrich-Alexanders Universität.
Freiberg, Baden.—Grossherzogliche Badische Albert-Ludwigs-Universität.
Giessen, Hesse.—Grossherzogliche Hessische Ludwigs-Universität.
Gottingen, Prussia.—Königliche Georg-August-Universität.
Greifswald, Prussia.—Königliche Universität.
Halle, Prussia.—Vereinigte Friedrichs-Universität Halle-Wittenberg.
Heidelberg, Baden.—Grossherzogliche Ruprecht-Karls-Universität.
Jena, Thuringia.—Grossherzogliche und Herzogliche Sächsische Gesamt-Universität.
Kiel, Prussia.—Königliche Christian-Albrechts-Universität.
Konigsberg, Prussia.—Königliche Albertus-Universität.
Leipzig, Saxony.—Universität.
Marburg, Prussia.—Universität.
Munich, Bavaria.—Königliche Bayr. Ludwig-Maximilians-Universität.
Rostock, Mecklenberg.—Universität.
Strassburg, Alsace-Lorraine.—Kaiser-Wilhelms-Universität.
Tübingen, Wurtemberg.—Königliche Eberhard-Karls-Universität.
Würzburg, Bavaria.—Königliche Julius-Maximilians Universität.

GREECE

Athens.—Τὸ ἐν Ἀθήναις ἐθνικὸν Πανεπιστήμιον. (National University.)

GUATEMALA

Guatemala.—Facultad de Medicina.

HUNGARY

Budapest.—Budapesti Királyi Magyar Tudomány-Egyetem (Royal Hungarian University).
Klausenburg.—Kolozsvári Magyar Királyi Ferencz-Jozsef Tudomány-Egyetem (Royal Hungarian Franz-Joseph University).

ICELAND

Reykjavik.—Loeknaskoli (School of Physicians).

INDIA

Bombay.—University of Bombay (Grant Medical College).
Calcutta.—University of Calcutta (Medical College of Bengal).
Lahore.—Panjab University (Lahore Medical College).
Madras.—University of Madras (Madras Medical College).

IRELAND

Dublin.—Royal University of Ireland (including Queen's College Belfast; Queen's College, Cork; Queen's College, Galway).
Dublin.—University of Dublin (The School of Physic in Ireland, Trinity College).
Dublin.—Catholic University Medical School.
Dublin.—Royal College of Surgeons, Schools of Surgery (including the Carmichael College of Medicine and the Ledwich School of Medicine).

ITALY

Bologna.—Regia Università degli Studi.
Cagliari, Sardinia.—Università degli Studi.
Camerino.—Libera Università degli Studi.
Catania.—Regia Università degli Studi di Catania.
Ferrara.—Libera Università degli Studi di Ferrara.
Florence.—Regia Instituto di Studi Superiori, Practici e di Perfezionamento.
Genoa.—Regia Università degli Studi.
Messina.—Regia Università degli Studi.
Modena.—Regia Università degli Studi.
Naples.—Regia Università degli Studi.
Padua.—Regia Università degli Studi.
Palermo.—Regia Università degli Studi.
Parma.—Regia Università degli Studi.
Paria.—Regia Università degli Studi.
Perugia.—Università Libra degli Studi.
Pisa.—Regia Università degli Studi.
Rome.—Regia Università degli Studi.
Sassari.—Regia Università degli Studi.
Siena.—Regia Università degli Studi.
Turin.—Regia Università degli Studi.

JAPAN

Kyoto.—Imperial University (part of medical school is located at Fukuoka).
Tokyo.—Imperial University (Tokio Medical College became Medical Department in 1877).

Medical schools are located also at Chiba, Sendai, Okayama, Kanazawa and Nagasaki.

MEXICO

Mexico.—Escuela de Medicina.

NETHERLANDS

Amsterdam.—Universiteit van Amsterdam.
Groningen.—Rijks-Universiteit te Groningen.
Leyden.—Rijks-Universiteit.
Utrecht.—Rijks-Universiteit.

NEW ZEALAND

Wellington.—University of New Zealand (affiliated with the University of Cambridge, England).

NORWAY

Christiania.—Kongelige Frederiks Universitet.

PERU

Lima.—Universidad Mayor de San Marcos.

PORTUGAL

Coimbra.—Universidade de Coimbra.
Lisbon.—Escola Medico-Cirurgica.

ROUMANIA

Bukharest.—Universitatea din Bucuresti.
Jassy.—Universitatea din Jasi.

RUSSIA

Helsingfors, Finland.—Kejserliga Alexanders Universitet.
Jurjev (formerly Dorpat).—Imperatorskij Jurjevskij Universitet.
Kazan.—Imperatorskij Kasanskij Universitet.
Kharkof.—Imperatorskij Charkovskij Universitet.
Kief.—Imperatorskij Universitet Sv. Vladimira.
Moscow.—Imperatorskij Moskovskij Universitet.
Odessa.—Imperatorskij Novorossijskij Universitet.
St. Petersburg.—Imperatorskij St. Petersbergskij Universitet: Including Vojenno-Medicinskaja Akademija (Military Medical Academy) and Zenskij Medicinskij Institut (Medical High School for Women).
Tomsk, Siberia.—Tomskij Universitet.
Warsaw.—Imperatorskij Varsavskij Universitet.

SCOTLAND

Aberdeen.—University of Aberdeen.
Dundee.—University of St. Andrews (University College).
Edinburgh.—University of Edinburgh.
Edinburgh.—School of Medicine of the Royal Colleges (including the Surgeons' Hall School).
Glasgow.—University of Glasgow (including Queen Margaret College).
Glasgow.—Anderson's College Medical School.
Glasgow.—St. Mungo's College and Glasgow Royal Infirmary.
Glasgow.—Western Medical School.

SPAIN

Barcelona.—Universidad de Barcelona.
Cadiz.—Facultad de Medicina.
Granada.—Universidad de Granada.
Madrid.—Universidad de Central de Espana.
Santiago.—Universidad.
Saragossa.—Universidad.
Seville.—Universidad de Sevilla. (To this university also belongs the Medical Faculty at Cadiz.)
Valencia.—Universidad Literaria.
Valladolid.—Universidad.

SWEDEN

Lund.—Kungl, Karolinska Universitetet.
Stockholm.—Karolinska Institutet (Medico-Chirurgical Institute). (This institute has the same chancellor as the universities at Lund and Upsala, and is guided by a similar constitution.)
Upsala.—Kungl, Universitetet i Upsala.

SWITZERLAND

Basel.—Universität.
Berne.—Kantonale Universität.
Geneva.—Université de Genève.
Lausanna.—Université.
Zurich.—Universität.

SYRIA

Beirut.—Syrian Protestant College.
Beirut.—Université Saint Joseph de Beyrouth.

URUGUAY

Montevideo.—Universidad.

WALES

Cardiff.—University of Wales (Cardiff School of Medicine).

MEDICAL STANDARDS ABROAD

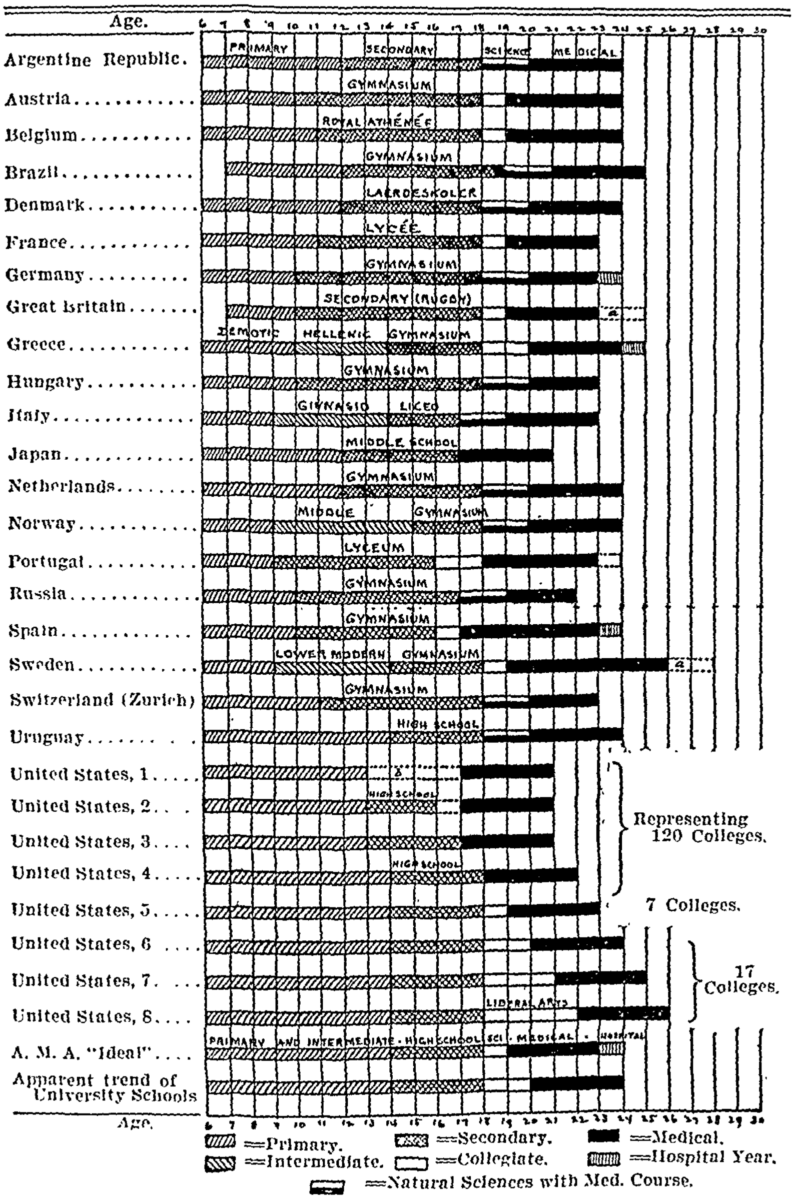
A list of medical colleges of all foreign countries shows a total of 165 such colleges outside the United States, while this country alone has 144. In other words, of the 309 medical colleges in all countries, the United States has 144, or 47 per cent., while the 30 other nations altogether have only 165, or 53 per cent. All European medical schools are medical faculties of universities or are under the direct control of universities, and there are no proprietary schools such as predominate in this country.

The information regarding preliminary education as well as collegiate and medical was obtained from original sources and from foreign publications. The data agree with the reports of the United States Bureau of Education, and in most instances have been confirmed by reports from the American consuls abroad.

The requirements in sixteen countries of Europe, Japan and three countries of South America are graphically presented in a chart, in which each division of education is shown according to the ages at which students are in attendance. The shaded portions of the bands represent primary and secondary education, the black portions the medical, and the white portions represent the requirements of higher preliminary education, including work in physics, chemistry and biology. The chart allows valuable comparisons to be made and, as measured by years, shows more of a uniformity of educational standards than one would expect. It is interesting to note how sharply the line representing the age of 18 separates the secondary from higher education.

The age at the completion of the medical course in each country, as shown in the chart, with one or two exceptions, represents the lowest age at which the student can secure the right to practice medicine, disregarding the rare exceptions when the student graduates at an earlier age. The average age is one or two years higher than is shown in the chart, since the regular course of study between the ages of 6 and 24 is often broken by sickness, failure to receive promotion, or other causes.

PRELIMINARY AND MEDICAL EDUCATION AT HOME AND ABROAD



In the majority of foreign countries secondary education begins from two to five years earlier than in this country and with a few exceptions has no direct connection with the elementary. In fact, in several European countries, in Great Britain and in France, for example, it appears that the majority of students entering the secondary schools secure their elementary instruction from private tutors or in preparatory courses offered by the secondary schools, rather than in the regular elementary schools.

It should be stated that, although the expression of educational requirements in terms of years, or months, or by the ages of students does not actually measure the value of the education obtained, nevertheless a knowledge of the minimum time requirements in other countries is of importance, and a comparison with the minimum time requirements in our own country is of much value. This chart is of peculiar interest. Educators of high repute have stated that the courses of study in the secondary schools of several European countries are the equivalent of a four-year high school course in this country, plus about two years of work in a college of liberal arts. It is, therefore, of some importance for us to know that the secondary schools of Europe may be completed at the age of 18, whereas two years of work in a college of arts in this country can rarely be completed before the age of 20. In other words, taking the above claims for granted, it is important for us to know that the training of 12 years, between the ages of 6 and 18, in Germany and other European countries, is the equivalent of 14 years' training in this country between the ages of 6 and 20.

Of all the countries named in the chart the United States is the only one which does not require preliminary work in physics, chemistry and biology of every medical student. In some of the countries named the work is taken in the first one or two years of the medical course, along with the usual medical studies, while in others, notably in France, Belgium and Sweden, it must be taken in a college of science or philosophy. In still others, as in Austria and in Great Britain, the work may be taken either in a college of liberal arts or in the medical school.

In France this work was given as a part of the regular medical course until in 1893, when it was transferred to the college of science, because the laboratories and trained instructors in those colleges made it certain that the courses would be thoroughly taught.

Only one year devoted to the preliminary scientific studies is required by all but two of the countries named or else the work extends through about two years along with regular medical subjects. In no instance is more than two years of college work devoted entirely to preliminary study.

In six of the countries named, disregarding rare exceptions, the earliest age at which the right to practice medicine can be secured, is 23. In three countries the age limit is 25 or beyond. But in the great majority the age limit is 24, and the entire course of elementary, secondary, college and medical education is completed in 18 years. This agrees with the "ideal standard" adopted at Portland, Ore., in 1905 by the American Medical Association, as well as with the combined course by which the students can secure the degrees of B.S. and M.D. in six years and which has been adopted by a number of colleges.

The well-known diversity of standards of medical education in the United States at the present time is also shown in the chart. Preliminary standards range from a common school education up to the requirement of a college degree. Of the 144 colleges in the United States, 121 require a four-year high school education or less, as shown in Groups 1 to 4, while 24 colleges are now requiring one or more years of work in a college of arts, 14 of these having raised their requirements in the past 3 years. There are now in the United States several medical schools which are probably equal to any found abroad.

The educational standards in the countries regarding which definite information has been obtained are briefly stated as follows:

Argentine Republic.—Elementary education extends between the ages of 6 and 14, and secondary education between the ages of 12 and 18, thereby overlapping the elementary by two years. Twelve years of study, therefore, lead to the medical course, which covers six years, including preliminary work in physics, chemistry and biology. The complete course requires 18 years, and the minimum age at the completion of the course is 24.

Austria.—Elementary education extends between the ages of 6 and 14, overlapping the gymnasium course by four years, the latter extending between the ages of 10 and 18. Twelve years of study, therefore, admit to medicine. The medical course covers six years and includes preliminary courses in physics, chemistry and biology. The total time required is 18 years and the minimum age at completion is 24.

Belgium.—Elementary education extends between the ages of 6 and 14, overlapping the work in the Royal Athénées, the secondary schools, by three years, the latter extending between the ages of 11 and 18. The time spent in the primary and secondary schools is, therefore, 12 years. An additional year devoted to physics, chemistry and biology in a college of science admits to the five-year medical course. The time necessary to complete the work is 18 years and the minimum age at completion is 24.

Brazil.—Elementary education extends between the ages of 7 and 15, overlapping the work of the gymnasium by three years, the latter extending between the ages of 12 and 19. Elementary work may be begun at the age of 6 years, and in such cases students may finish the gymnasium at 18. Twelve years of work lead to medicine, where six years of work are required, including preliminary courses in physics, chemistry and biology. The time required to complete the entire course is 18 years and the usual age at completion is 25.

Denmark.—Elementary education extends between the ages of 6 and 12, leading to the "laerdeskoler," the secondary schools which extend between the ages of 12 and 18, a total of 12 years. The medical course covers six years, including preliminary courses in the natural sciences. Time to complete the work is 18 years and the minimum age at completion is 24.

France.—Elementary education extends between the ages of 6 and 13 or 14. The majority of students entering the secondary schools, however, obtain their elementary work from tutors or in special preparatory courses connected with the lycées. The secondary school, the lycée, has a nine-year course divided into two cycles of five and four years, respectively, and extends between the ages of 11 and 18. From age 6, therefore, twelve years of training are required to complete the primary and secondary work. An additional year devoted to the natural sciences which must be taken in a college of science admits to the four-year medical course. Entire course therefore, is 17 years and the age at completion is 23.

Germany.—Elementary study extends between the ages of 6 and 14, overlapping the gymnasium by four years, the latter extending between the ages of 10 and 18. Then follows a six-year course, which includes preliminary courses in the natural sciences, and the last year must be spent in hospital work. This gives the right to practice, but additional work is required, and a severe examination, the "examen rigorosum," must be passed to secure the degree of doctor. Eighteen years of work lead to medical practice or 19 to the Doctorate, and the age at completion is at least 24 or 25.

Great Britain.—There appears to be no connection between elementary and secondary systems of education. Elementary public schools have been provided, extending between the ages of 6 and 12 or 15. Those entering secondary schools usually obtain their elementary instruction from private tutors or in the preparatory courses of the secondary schools. At present there are no public secondary schools in Great Britain, although that country abounds in private secondary schools, having courses varying as to age. Taking Rugby as an example, the course extends from the age of 10 to 17. Others extend from the age of 12 to 19. There are various ages at which the student may enter the medical schools, the minimum age fixed by the General Medical Council being 16. The time spent in elementary and secondary education, therefore, ranges from 10 to 13 years. Work must then be taken in physics, chemistry and biology either in a college of science or in the medical college as a part of the regular five-year medical course. Authorities agree that only a small proportion of students enter the medical school before the 18th year and few graduates in medicine before the age of 23. Since the promotion from one grade to another depends entirely on the passing of an examination, the time to complete the medical course usually requires six or more years.

Greece.—Elementary education is given in the "demotic" schools between the ages of 6 and 10 and in the "hellenic" schools between the ages of 10 and 14, leading to the secondary schools or gymnasia, which occupy the time between the ages of 14 and 18. Twelve years are occupied, therefore, by elementary and secondary education. Two years of work in the university devoted to botany, chemistry, physics, mineralogy, geology and zoology must be completed in order to begin the four-year medical course for the degree of Doctor. To secure the right to practice, nine months of postgraduate work in a hospital must be completed. The total time requirement is 19 years, and the minimum age at completion of the entire course is 25.

Hungary.—Elementary education extends between the ages of 6 and 12 years, overlapping secondary education, which extends between the ages of 10 and 18. The 12 years' work thus completed leads to the five-year medical course, which includes preliminary work in physics, chemistry and biology. The time for the entire course is therefore, 17 years and the minimum age at completion is 23.

Italy.—Elementary education is divided into lower elementary extending between the ages of 6 and 9 years and higher elementary extending between 9 and 12 years. Secondary education is given in the ginnasio, extending between the ages of 10 and 15 years and in the liceo which extends between the ages of 15 and 18 years. This is followed by a six-year course in medicine which includes work in the natural sciences. The complete course, therefore, is elementary study 4 years, ginnasio 5 years, liceo 3 years and medicine 6 years, a total of 18 years. The minimum age at completion of the course is 24 years.

Japan.—Ordinary elementary education extends between the ages of 6 and 10 years and higher elementary education is between the ages of 10 and 14 years, overlapping the work of the "middle school" by two years, the latter extending between the ages of 12 and 17 years. Completing the work of the middle school admits to the four-year medical course in all medical schools, except those at Tokio, Kioto and Fukuoka, which require also the completion of three years of higher preliminary education.

Netherlands.—Elementary education extends between the ages of 6 and 12 years, leading to the gymnasium, which extends from the 12th to the 18th year. Admission is then secured to the six-year medical course, which includes work in the natural sciences. The time to complete the entire course is 18 years and the minimum age is 24.

Norway.—Elementary education extends between the ages of 6 and 12 years, overlapping the secondary, which extends between the ages of 9 and 18 years. Secondary education is divided into a six-year middle school and a three-year gymnasium. The completion of the course of the gymnasium admits to the six-year medical course, which includes work in physics, chemistry and biology. The entire time, therefore, is 18 years and the minimum age at completion is 24. This gives the right to practice with the title of physician. The degree of Doctor requires extra work and the passing of special examinations.

Portugal.—Elementary education extends between the ages of 6 and 12 years, thus overlapping the work of the lyceum, which extends between the ages of 9 and 16. This is followed by a course of one or two years in a faculty of philosophy and mathematics and then five years in medicine for the degree of licentiate in medicine and a sixth year for the degree of Doc-

tor. The time for the entire course, therefore, is 18 years and the minimum age at completion is 24.

Russia.—Elementary education extends for 5 years between the ages of 6 and 11. Secondary education, as given in the gymnasium, extends over 7 years between the ages of 11 and 18. Completion of the secondary work admits to the 5-year medical course, which includes preliminary work in the natural sciences extending through the first two years along with other subjects. The total time is 17 years and the minimum age at completion is 23.

Spain.—Elementary education extends between the ages of 6 and 14 years, overlapping the work of the gymnasia, the secondary schools, which conduct work between the ages of 10 and 17. After completing the work of the gymnasium, one year of "preliminary study" must be taken, devoted to chemistry and natural science. Six years more gives the degree of licentiate in medicine and one more that of doctor. The complete course, therefore, requires 18 years of study and the minimum age at completion is 24.

Sweden.—Elementary education extends over 7 years between the ages of 6 and 13. Secondary education consists of a *five-year lower modern course and a four-year higher gymnasium*, the two courses being attended by students between the ages of 9 and 18. After completing the gymnasium, one year of preliminary work in the natural sciences must be taken in a college of philosophy. Seven years more of study gives the degree of licentiate in medicine, which carries with it the right *to practice. To secure the degree of Doctor* requires more work and the passing of special examinations. Promotion to each succeeding grade depends on the passing of an examination, and the medical course often extends to 9 or more years. The entire course, therefore, includes: elementary work, 3 years; lower modern school, 5 years; higher gymnasium, 4 years; college of philosophy, 1 year, and medicine, 7 years, a total of 20 years. The age at completion is 26 to 28 years.

Switzerland.—The Cantons differ somewhat in the length of their secondary courses, but all agree in regard to the preliminary work for admission to medicine and the length of the medical course. Taking the Canton of Zürich as an example, the elementary work extends over 6 years between the ages of 6 and 12. The secondary schools, known as gymnasia (realschulen or lycea), have courses covering seven years, students attending between the ages of 11 and 18. Graduation from the gymnasium admits to the five-year medical course, which includes preliminary courses in physics, chemistry and biology. The entire course, therefore, requires: elementary work, 5 years; gymnasium, 7 years, and medicine, 5 years, a total of 17 years. The minimum age at completion is 23. The degree of Doctor is not essential to practice, but may be obtained by writing a special thesis and taking certain courses without necessarily requiring a longer course.

Uruguay.—Elementary education extends between the ages of 6 and 14 years, leading to the secondary, which extends from the 14th to the 18th year. A six-year medical course follows, which includes preliminary work in physics, chemistry and biology. The time to complete the entire work is 18 years and the minimum age at completion is 24.

THE AMERICAN MEDICAL ASSOCIATION STANDARDS OF MEDICAL EDUCATION

These standards were suggested by the Council on Medical Education and the reports were adopted by the House of Delegates of the American Medical Association.

Standard [illegible] to

The minimum standard [illegible] the practice of medicine is as [illegible]

1. (a) The preliminary requi[illegible] school education or its equivalen[illegible] student to one of our recognized u[illegible] (after Jan. 1, 1910), a ye[illegible] months, devoted to the study of physics, chemistry, biology and one language (preferably German or French), to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

The Ideal Standard

The ideal standard to be aimed at from the present viewpoint should consist of: (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed upon by the state authorities. (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangement to be made that this year could be taken either in a college of liberal arts or in the medical school. (C) Four years in pure medical work, the first two of which should be largely spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics, and the specialties. (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but [illegible] hought that it is not and never will be desirable to m[illegible] a college education a requirement to the study of m[illegible] as it would make the age of graduation from 27 to 2[illegible] regarded as too old a period [illegible] which the y[illegible] hould begin his life's work. [illegible] bvious [illegible] able scheme of requiremen[illegible] be [illegible] recommended.

1 C[illegible]

Below [illegible] laboratory equipme[illegible] n in a medical co[illegible] factory course[illegible] nding:

1. [illegible] llege sho[illegible]

([illegible] tal [illegible] d, [illegible] a [illegible] e [illegible] m[illegible] r- [illegible] h[illegible] on [illegible] ti [illegible] s

REQUIRED BRANCHES.

	Units.	Points.	Counts.
Rhetoric and composition	1	2	5
History of English and American literature	1	2	5
Algebra through graduates	1	2	5
Geometry, plane	1	2	5
Latin, grammar and 4 books of Cæsar or equivalent	2	4	10
U. S. History and Civics	1	2	5
Physics, with laboratory work	1	2	5
Total	8	16	40

ELECTIVE BRANCHES.

Seven units, 14 points or credits, or 35 counts to be selected from the following subjects. Not more than 2 units, 4 points or credits or 10 counts from any one group:

	Units.	Points.	Counts.
Group 1:			
English Classics (College Entrance Examining Board list)	2	4	10
Group 2:			
Geometry, solid	.5	1	2.5
Trigonometry	.5	1	2.5
Group 3:			
Latin, Cicero (7 orations)	1	2	5
Latin, Virgil (6 books)	1	2	5
Group 4:			
German, grammar with 2 years' certified work	2	4	10
French, grammar with 2 years' certified work	2	4	10
Spanish, grammar with 2 years' certified work	2	4	10
Group 5:			
History, Greece and Rome	1	2	5
History, medieval and modern	1	2	5
History, England, half years' work	.5	1	2.5
History, France, half years' work	.5	1	2.5
Group 6:			
Biology, with laboratory work	1	2	5
Botany, with laboratory work	.5	1	2.5
Zoology, with laboratory work	.5	1	2.5
Physiology and Hygiene, with laboratory work	1	2	5
Group 7:			
Chemistry, with laboratory	1	2	5
Total	18	36	90

A *unit* is the credit value of 36 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *point* is the credit value of 18 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *count* is the credit of one recitation period per week of not less than 45 minutes through 36 weeks.

It is urged that within a reasonable time the minimum requirements as given in paragraph (b) will be enlarged to include an additional year or university physics, chemistry, biology and a reading knowledge of German or French.

B. Preliminary Examination.—The preliminary examination should be taken before the board of medical examiners or its authorized agent, and should represent the work of 15 units (30 points or credits or 75 counts) in accordance with the above outline. Under no circumstances must this examination be given by any one connected with the medical college.

Later, when the requirement is considered reasonable, university courses in physics, chemistry, biology and modern languages should be required in this examination.

2. Medical Education.—The medical college should give a strictly graded course covering four years of not less than thirty weeks each year, exclusive of holidays. Each year should cover not less than thirty hours per week of scheduled class room work in lectures, recitations, laboratory and clinical work. At least forty-two calendar months should elapse between the dates of matriculation and graduation. The complete course should approximate 3,600 hours and include:

(a) Two years of study, consisting largely of laboratory work in anatomy, histology, embryology, physiology, chemistry, pharmacology, physiologic chemistry, bacteriology and pathology.

(b) Two years of clinical work largely in hospitals and dispensaries, with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, pharmacology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. There should also be a laboratory course in clinical microscopy, including hematology, and the hospital courses should be accompanied by work in properly equipped clinical laboratories.

3. Advanced Standing.—(a) Advanced standing may be granted to the extent of three years of work taken at other recognized colleges.

(b) In giving advanced standing the college should not discriminate against its own full-course students. It is meant by this that students should not be given full standing when they come from colleges not giving equivalent courses.

(c) Before granting any advanced standing the dean or secretary of the school to which the student seeks admission should obtain from the corresponding officer of the school from which the student comes a full statement of his credentials, so far as preliminary and medical education is concerned, and the standing of the student in each course he has taken.

4. Graduation.—The medical college should require of each student before graduation:

(a) Compliance with the above given requirements of preliminary and medical education.

(b) An attendance of at least 80 per cent. on each course of instruction above mentioned.

(c) The passing of a final examination in each course of instruction above mentioned with a percentage of at least 75.

(d) The individual dissection of at least one lateral half of a human cadaver.

(e) The individual attendance on and management of at least two maternity cases.

(f) The work of at least the fourth or senior year must be taken in the medical college granting the degree.

II. EQUIPMENT AND FACILITIES

1. Buildings.—The medical college buildings should be well lighted, sanitary and commodious, with ample space for laboratories, amphitheaters, examining, lecture, recitation and special research rooms, as well as storage rooms and a suitable place for such animals as are used in experimental work.

2. Laboratories.—There should be well-equipped laboratories for practical anatomy, histology, embryology, physiology, chemistry, physiologic chemistry pharmacology, bacteriology and pathology, and these laboratories should be officered by trained instructors paid to devote their entire time to the preparation of materials used in instruction and to teaching and research. By a well-equipped laboratory is understood a laboratory provided with all the microscopes and other apparatus necessary to enable each student to carry on the work of that department intelligently and successfully.

3. Hospitals, Dispensaries and Clinical Facilities.—(a) The main hospital and dispensary should be in close proximity to the college building, of easy access to the students, and should be under the control of the college at least so far as clinical material is concerned.

(b) The hospital material available for clinical purposes should be in proportion to a daily average of at least 200 patients to 100 students in the senior class.

(c) The dispensary material should be carefully classified and properly used.

4. Library, Museum, Charts, Etc.—(a) Library: The medical college should have a working medical library, including the more recent text and reference books, as well as ten or more of the chief medical periodicals. This library room should be easily accessible, should be provided with suitable tables and chairs, and should have an attendant in charge.

(b) Museum: There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed in order that any specimen may be easily found and employed for teaching purposes. The value of the pathologic collection could be greatly augmented by having slides showing the microscopic findings in each case carefully prepared, labeled, indexed and kept easily accessible. Clinical records of these cases should also be drawn up, indexed and filed for easy reference.

(c) Charts, Models, Stereopticons, Etc.—The medical college should have a supply of anatomic charts, embryologic models and other apparatus, such as a steropticon or a reflectoscope, as well as microphotographic, Roentgen ray or other apparatus, of service in the teaching of medicine.

(Continued on page 549)

tor. The time for the entire course, therefore, is 18 years and the minimum age at completion is 24.

Russia.—Elementary education extends for 5 years between the ages of 6 and 11. Secondary education, as given in the gymnasium, extends over 7 years between the ages of 11 and 18. Completion of the secondary work admits to the 5-year medical course, which includes preliminary work in the natural sciences extending through the first two years along with other subjects. The total time is 17 years and the minimum age at completion is 23.

Spain.—Elementary education extends between the ages of 6 and 14 years, overlapping the work of the gymnasia, the secondary schools, which conduct work between the ages of 10 and 17. After completing the work of the gymnasium, one year of "preliminary study" must be taken, devoted to chemistry and natural science. Six years more gives the degree of licentiate in medicine and one more that of doctor. The complete course, therefore, requires 18 years of study and the minimum age at completion is 24.

Sweden.—Elementary education extends over 7 years between the ages of 6 and 13. Secondary education consists of a five-year lower modern course and a four-year higher gymnasium, the two courses being attended by students between the ages of 9 and 18. After completing the gymnasium, one year of preliminary work in the natural sciences must be taken in a college of philosophy. Seven years more of study gives the degree of licentiate in medicine, which carries with it the right to practice. To secure the degree of Doctor requires more work and the passing of special examinations. Promotion to each succeeding grade depends on the passing of an examination, and the medical course often extends to 9 or more years. The entire course, therefore, includes: elementary work, 3 years; lower modern school, 5 years; higher gymnasium, 4 years; college of philosophy, 1 year, and medicine, 7 years, a total of 20 years. The age at completion is 26 to 28 years.

Switzerland.—The Cantons differ somewhat in the length of their secondary courses, but all agree in regard to the preliminary work for admission to medicine and the length of the medical course. Taking the Canton of Zürich as an example, the elementary work extends over 6 years between the ages of 6 and 12. The secondary schools, known as gymnasia (realschulen or lyçea), have courses covering seven years, students attending between the ages of 11 and 18. Graduation from the gymnasium admits to the five-year medical course, which includes preliminary courses in physics, chemistry and biology. The entire course, therefore, requires: elementary work, 5 years; gymnasium, 7 years, and medicine, 5 years, a total of 17 years. The minimum age at completion is 23. The degree of Doctor is not essential to practice, but may be obtained by writing a special thesis and taking certain courses without necessarily requiring a longer course.

Uruguay.—Elementary education extends between the ages of 6 and 14 years, leading to the secondary, which extends from the 14th to the 18th year. A six-year medical course follows, which includes preliminary work in physics, chemistry and biology. The time to complete the entire work is 18 years, and the minimum age at completion is 24.

THE AMERICAN MEDICAL ASSOCIATION STANDARDS OF MEDICAL EDUCATION

These standards were suggested by the Council on Medical Education and the reports were adopted by the House of Delegates of the American Medical Association.

Standard Now Recommended

The minimum standard now recommended prerequisite to the practice of medicine is as follows:

1. (a) The preliminary requirement to be a four-year high school education or its equivalent, such as would admit the student to one of our recognized universities; (b) and in addition (after Jan. 1, 1910), a year of not less than nine months, devoted to the study of physics, chemistry, biology and one language (preferably German or French), to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

The Ideal Standard

The ideal standard to be aimed at from the present viewpoint should consist of: (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed upon by the state authorities. (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangement to be made that this year could be taken either in a college of liberal arts or in the medical school. (C) Four years in pure medical work, the first two of which should be largely spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics, and the specialties. (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended.

A Medical College in Good Standing

Below is a schedule of the minimum requirements, laboratory equipment and clinical facilities which should obtain in a medical college before it can be considered as giving a satisfactory course or be determined as a medical college in good standing:

I. REQUIREMENTS

1. *Matriculation.*—For matriculation the medical college should require of each student:

(1) A certificate of good moral character, signed by two reputable physicians of the state in which the applicant resides; and,

(2) As evidence of satisfactory preliminary education, a *medical student's matriculation certificate*, issued by the state board of medical examiners or its authorized agent, this certificate to be issued on (A) acceptable credentials, or (B) on successfully passing a preliminary examination.

A. Acceptable Credentials.—(a) A degree from an accredited university or college of arts or science; or,

(b) A diploma from an accredited four-year high school, normal school or academy which required for admission eight years of study in the primary and intermediate grades and which furnished a preliminary education of at least 15 units (30 points or credits, or 75 counts), as given in the following outline (suggested by Dr. W. J. Means, a member of the Council's committee and also chairman of the Judicial Council of the Association of American Medical Colleges):

REQUIRED BRANCHES.

	Units.	Points.	Counts.
Rhetoric and composition	1	2	5
History of English and American literature	1	2	5
Algebra through graduates	1	2	5
Geometry, plane	1	2	5
Latin, grammar and 4 books of Cæsar or equivalent	2	4	10
U. S. History and Civics	1	2	5
Physics, with laboratory work	1	2	5
Total	8	16	40

ELECTIVE BRANCHES.

Seven units, 14 points or credits, or 35 counts to be selected from the following subjects. Not more than 2 units, 4 points or credits or 10 counts from any one group:

	Units.	Points.	Counts.
Group 1:			
English Classics (College Entrance Examining Board list)	2	4	10
Group 2:			
Geometry, solid	.5	1	2.5
Trigonometry	.5	1	2.5
Group 3:			
Latin, Cicero (7 orations)	1	2	5
Latin, Virgil (6 books)	1	2	5
Group 4:			
German, grammar with 2 years' certified work	2	4	10
French, grammar with 2 years' certified work	2	4	10
Spanish, grammar with 2 years' certified work	2	4	10
Group 5:			
History, Greece and Rome	1	2	5
History, medieval and modern	1	2	5
History, England, half years' work	.5	1	2.5
History, France, half years' work	.5	1	2.5
Group 6:			
Biology, with laboratory work	1	2	5
Botany, with laboratory work	.5	1	2.5
Zoology, with laboratory work	.5	1	2.5
Physiology and Hygiene, with laboratory work	1	2	5
Group 7:			
Chemistry, with laboratory	1	2	5
Total	18	36	90

A *unit* is the credit value of 36 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *point* is the credit value of 18 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *count* is the credit of one recitation period per week of not less than 45 minutes through 36 weeks.

It is urged that within a reasonable time the minimum requirements as given in paragraph (b) will be enlarged to include an additional year or university physics, chemistry, biology and a reading knowledge of German or French.

B. Preliminary Examination.—The preliminary examination should be taken before the board of medical examiners or its authorized agent, and should represent the work of 15 units (30 points or credits or 75 counts) in accordance with the above outline. Under no circumstances must this examination be given by any one connected with the medical college.

Later, when the requirement is considered reasonable, university courses in physics, chemistry, biology and modern languages should be required in this examination.

2. Medical Education.—The medical college should give a strictly graded course covering four years of not less than thirty weeks each year, exclusive of holidays. Each year should cover not less than thirty hours per week of scheduled class room work in lectures, recitations, laboratory and clinical work. At least forty-two calendar months should elapse between the dates of matriculation and graduation. The complete course should approximate 3,600 hours and include:

(a) Two years of study, consisting largely of laboratory work in anatomy, histology, embryology, physiology, chemistry, pharmacology, physiologic chemistry, bacteriology and pathology.

(b) Two years of clinical work largely in hospitals and dispensaries, with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, pharmacology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. There should also be a laboratory course in clinical microscopy, including hematology, and the hospital courses should be accompanied by work in properly equipped clinical laboratories.

3. Advanced Standing.—(a) Advanced standing may be granted to the extent of three years of work taken at other recognized colleges.

(b) In giving advanced standing the college should not discriminate against its own full-course students. It is meant by this that students should not be given full standing when they come from colleges not giving equivalent courses.

(c) Before granting any advanced standing the dean or secretary of the school to which the student seeks admission should obtain from the corresponding officer of the school from which the student comes a full statement of his credentials, so far as preliminary and medical education is concerned, and the standing of the student in each course he has taken.

4. Graduation.—The medical college should require of each student before graduation:

(a) Compliance with the above given requirements of preliminary and medical education.

(b) An attendance of at least 80 per cent. on each course of instruction above mentioned.

(c) The passing of a final examination in each course of instruction above mentioned with a percentage of at least 75.

(d) The individual dissection of at least one lateral half of a human cadaver.

(e) The individual attendance on and management of at least two maternity cases.

(f) The work of at least the fourth or senior year must be taken in the medical college granting the degree.

II. EQUIPMENT AND FACILITIES

1. Buildings.—The medical college buildings should be well lighted, sanitary and commodious, with ample space for laboratories, amphitheaters, examining, lecture, recitation and special research rooms, as well as storage rooms and a suitable place for such animals as are used in experimental work.

2. Laboratories.—There should be well-equipped laboratories for practical anatomy, histology, embryology, physiology, chemistry, physiologic chemistry pharmacology, bacteriology and pathology, and these laboratories should be officered by trained instructors paid to devote their entire time to the preparation of materials used in instruction and to teaching and research. By a well-equipped laboratory is understood a laboratory provided with all the microscopes and other apparatus necessary to enable each student to carry on the work of that department intelligently and successfully.

3. Hospitals, Dispensaries and Clinical Facilities.—(a) The main hospital and dispensary should be in close proximity to the college building, of easy access to the students, and should be under the control of the college at least so far as clinical material is concerned.

(b) The hospital material available for clinical purposes should be in proportion to a daily average of at least 200 patients to 100 students in the senior class.

(c) The dispensary material should be carefully classified and properly used.

4. Library, Museum, Charts, Etc.—(a) Library: The medical college should have a working medical library, including the more recent text and reference books, as well as ten or more of the chief medical periodicals. This library room should be easily accessible, should be provided with suitable tables and chairs, and should have an attendant in charge.

(b) Museum: There should be a medical museum having its various anatomic, embryologic, pathologic and other specimens carefully prepared, labeled and indexed in order that any specimen may be easily found and employed for teaching purposes. The value of the pathologic collection could be greatly augmented by having slides showing the microscopic findings in each case carefully prepared, labeled, indexed and kept easily accessible. Clinical records of these cases should also be drawn up, indexed and filed for easy reference.

(c) Charts, Models, Stereopticons, Etc.—The medical college should have a supply of anatomic charts, embryologic models and other apparatus, such as a steropticon or a reflectoscope, as well as microphotographic, Roentgen ray or other apparatus, of service in the teaching of medicine.

(Continued on page 549)

tor. The time for the entire course, therefore, is 18 years and the minimum age at completion is 24.

Russia.—Elementary education extends for 5 years between the ages of 6 and 11. Secondary education, as given in the gymnasium, extends over 7 years between the ages of 11 and 18. Completion of the secondary work admits to the 5-year medical course, which includes preliminary work in the natural sciences extending through the first two years along with other subjects. The total time is 17 years and the minimum age at completion is 23.

Spain.—Elementary education extends between the ages of 6 and 14 years, overlapping the work of the gymnasia, the secondary schools, which conduct work between the ages of 10 and 17. After completing the work of the gymnasium, one year of "preliminary study" must be taken, devoted to chemistry and natural science. Six years more gives the degree of licentiate in medicine and one more that of doctor. The complete course, therefore, requires 18 years of study and the minimum age at completion is 24.

Sweden.—Elementary education extends over 7 years between the ages of 6 and 13. Secondary education consists of a five-year lower modern course and a four-year higher gymnasium, the two courses being attended by students between the ages of 9 and 18. After completing the gymnasium, one year of preliminary work in the natural sciences must be taken in a college of philosophy. Seven years more of study gives the degree of licentiate in medicine, which carries with it the right to practice. To secure the degree of Doctor requires more work and the passing of special examinations. Promotion to each succeeding grade depends on the passing of an examination, and the medical course often extends to 9 or more years. The entire course, therefore, includes: elementary work, 3 years; lower modern school, 5 years; higher gymnasium, 4 years; college of philosophy, 1 year, and medicine, 7 years, a total of 20 years. The age at completion is 26 to 28 years.

Switzerland.—The Cantons differ somewhat in the length of their secondary courses, but all agree in regard to the preliminary work for admission to medicine and the length of the medical course. Taking the Canton of Zürich as an example, the elementary work extends over 6 years between the ages of 6 and 12. The secondary schools, known as gymnasia (realschulen or lycea), have courses covering seven years, students attending between the ages of 11 and 18. Graduation from the gymnasium admits to the five-year medical course, which includes preliminary courses in physics, chemistry and biology. The entire course, therefore, requires: elementary work, 5 years; gymnasium, 7 years, and medicine, 5 years, a total of 17 years. The minimum age at completion is 23. The degree of Doctor is not essential to practice, but may be obtained by writing a special thesis and taking certain courses without necessarily requiring a longer course.

Uruguay.—Elementary education extends between the ages of 6 and 14 years, leading to the secondary, which extends from the 14th to the 18th year. A six-year medical course follows, which includes preliminary work in physics, chemistry and biology. The time to complete the entire work is 18 years, and the minimum age at completion is 24.

THE AMERICAN MEDICAL ASSOCIATION STANDARDS OF MEDICAL EDUCATION

These standards were suggested by the Council on Medical Education and the reports were adopted by the House of Delegates of the American Medical Association.

Standard Now Recommended

The minimum standard now recommended prerequisite to the practice of medicine is as follows:

1. (a) The preliminary requirement to be a four-year high school education or its equivalent, such as would admit the student to one of our recognized universities; (b) and in addition (after Jan. 1, 1910), a year of not less than nine months, devoted to the study of physics, chemistry, biology and one language (preferably German or French), to be taken either in a college of liberal arts or in a recognized medical college having a preliminary year devoted exclusively to the subjects mentioned.

2. There should be a requirement that previous to matriculation in a medical college every student must secure from the State Examining Board a "medical student's entrance certificate," which would be issued either on presentation of credentials of preliminary education not less than that laid down by requirement one, or on passing an examination given by the Board and which will satisfy the Board that the student has an equivalent education.

3. A medical training in a medical college, having four years of not less than thirty weeks each year, exclusive of holidays, of thirty hours per week of actual work.

4. Graduation from an approved medical college required to entitle the candidate to an examination before a state examining board.

5. The passing of a satisfactory examination before a state examining board.

The Ideal Standard

The ideal standard to be aimed at from the present viewpoint should consist of: (A) Preliminary education sufficient to enable the candidate to enter our recognized universities, such qualifications to be passed upon by the state authorities. (B) A course of at least one year to be devoted to physics, chemistry and biology, such arrangement to be made that this year could be taken either in a college of liberal arts or in the medical school. (C) Four years in pure medical work, the first two of which should be largely spent in laboratories of anatomy, physiology, pathology, pharmacology, etc., and the last two in close contact with patients in dispensaries and hospitals in the study of medicine, surgery, obstetrics, and the specialties. (D) A sixth year as an interne in a hospital or dispensary should then complete the medical course.

Under such a scheme the majority of men would begin the study of medicine between 18 and 19 years of age, and would graduate from the hospital interneship at from 24 to 25. A college education is recognized as a desirable preparation for a limited number of men, but it is thought that it is not and never will be desirable to make such college education a requirement to the study of medicine, as it would make the age of graduation from 27 to 28 years, which is regarded as too old a period at which the young medical man should begin his life's work. It is obvious that this very desirable scheme of requirements can not be at once demanded or recommended.

A Medical College in Good Standing

Below is a schedule of the minimum requirements, laboratory equipment and clinical facilities which should obtain in a medical college before it can be considered as giving a satisfactory course or be determined as a medical college in good standing:

I. REQUIREMENTS

1. Matriculation.—For matriculation the medical college should require of each student:

(1) A certificate of good moral character, signed by two reputable physicians of the state in which the applicant resides; and,

(2) As evidence of satisfactory preliminary education, a medical student's matriculation certificate, issued by the state board of medical examiners or its authorized agent, this certificate to be issued on (A) acceptable credentials, or (B) on successfully passing a preliminary examination.

A. Acceptable Credentials.—(a) A degree from an accredited university or college of arts or science; or,

(b) A diploma from an accredited four-year high school, normal school or academy which required for admission eight years of study in the primary and intermediate grades and which furnished a preliminary education of at least 15 units (30 points or credits, or 75 counts), as given in the following outline (suggested by Dr. W. J. Means, a member of the Council's committee and also chairman of the Judicial Council of the Association of American Medical Colleges):

REQUIRED BRANCHES.

	Units.	Points.	Counts.
Rhetoric and composition	1	2	5
History of English and American literature	1	2	5
Algebra through graduates	1	2	5
Geometry, plane	1	2	5
Latin, grammar and 4 books of Cæsar or equivalent	2	4	10
U. S. History and Civics	1	2	5
Physics, with laboratory work	1	2	5
Total	8	16	40

ELECTIVE BRANCHES.

Seven units, 14 points or credits, or 35 counts to be selected from the following subjects. Not more than 2 units, 4 points or credits or 10 counts from any one group:

	Units.	Points.	Counts.
Group 1:			
English Classics (College Entrance Examining Board list)	2	4	10
Group 2:			
Geometry, solid	.5	1	2.5
Trigonometry	.5	1	2.5
Group 3:			
Latin, Cicero (7 orations)	1	2	5
Latin, Virgil (6 books)	1	2	5
Group 4:			
German, grammar with 2 years' certified work	2	4	10
French, grammar with 2 years' certified work	2	4	10
Spanish, grammar with 2 years' certified work	2	4	10
Group 5:			
History, Greece and Rome	1	2	5
History, medieval and modern	1	2	5
History, England, half years' work	.5	1	2.5
History, France, half years' work	.5	1	2.5
Group 6:			
Biology, with laboratory work	1	2	5
Botany, with laboratory work	.5	1	2.5
Zoology, with laboratory work	.5	1	2.5
Physiology and Hygiene, with laboratory work	1	2	5
Group 7:			
Chemistry, with laboratory	1	2	5
Total	18	36	90

A *unit* is the credit value of 36 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *point* is the credit value of 18 weeks' work of 5 recitation periods per week, each recitation period to be of not less than 45 minutes.

A *count* is the credit of one recitation period per week of not less than 45 minutes through 36 weeks.

It is urged that within a reasonable time the minimum requirements as given in paragraph (b) will be enlarged to include an additional year or university physics, chemistry, biology and a reading knowledge of German or French.

B. Preliminary Examination.—The preliminary examination should be taken before the board of medical examiners or its authorized agent, and should represent the work of 15 units (30 points or credits or 75 counts) in accordance with the above outline. Under no circumstances must this examination be given by any one connected with the medical college.

Later, when the requirement is considered reasonable, university courses in physics, chemistry, biology and modern languages should be required in this examination.

2. Medical Education.—The medical college should give a strictly graded course covering four years of not less than thirty weeks each year, exclusive of holidays. Each year should cover not less than thirty hours per week of scheduled class room work in lectures, recitations, laboratory and clinical work. At least forty-two calendar months should elapse between the dates of matriculation and graduation. The complete course should approximate 3,600 hours and include:

(a) Two years of study, consisting largely of laboratory work in anatomy, histology, embryology, physiology, chemistry, pharmacology, physiologic chemistry, bacteriology and pathology.

(b) Two years of clinical work largely in hospitals and dispensaries, with thorough courses in internal medicine (including physical diagnosis, pediatrics, nervous and mental diseases), surgery (including surgical anatomy and operative surgery on the cadaver), obstetrics, gynecology, materia medica, pharmacology, laryngology, rhinology, ophthalmology, otology, dermatology, hygiene and medical jurisprudence. There should also be a laboratory course in clinical microscopy, including hematology, and the hospital courses should be accompanied by work in properly equipped clinical laboratories.

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(Continued on page 549)

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES

Number.	NAME AND LOCATION OF COLLEGE	Population of city where college is located. (Census Bureau estimate. 1906.)	No. of students registered 1908-9. Men.	No. of students registered 1908-9. Women.	Graduates 1909. Men.	Graduates 1909. Women.	Grads. with A.B. or B.S.	No. of teachers.	Weeks in college year.	Total fees. (Dollars.) 1st year.	Total fees. (Dollars.) 2nd year.	Total fees. (Dollars.) 3rd year.	Total fees. (Dollars.) 4th year.	Executive Officer.	Session of 1909-10. Begins 1909.	Session of 1909-10. Ends 1910.	Number.
	ALABAMA		360	....	57	....	....										
1	Birmingham Medical College, Birmingham.—R.	45,869	169	....	28	....	....	32	28	75	75	75	100	B. L. Wyman, M.D., Dean	Sept. 29	April 28	1
2	University of Alabama, Medical Dept., Mobile.—	42,903	191	....	29	....	....	25	28	100	100	100	125	Rhett Goode, M.D., Dean	Sept. 20	April 18	2
	ARKANSAS		257	3	35	1	6										
3	College of Physicians and Surgeons, Little Rock.—R.	39,959	80	1	14	0	4	42	28	75	75	75	100	J. P. Runyan, M.D., Dean	Oct. 1	May 1	3
4	Univ. of Arkansas, Med. Dept., Little Rock.—R.	39,959	177	2	21	1	2	32	28	75	75	75	100	C. E. Witt, M.D., Secretary	Oct. 1	April 30	4
	CALIFORNIA		314	30	69	6	5										
5	Cooper Medical College, San Francisco.—R. (a)	364,677	116	1	21	1	1	54	35	175	170	170	195	Henry Gibbons, Jr., M.D., Dean	Aug. 15	May 7	5
6	Univ. of California, Med. Dept., San Francisco.—R.	364,677	26	10	4	1	4	62	36	150	150	150	150	Arnold A. D'Ancona, M.D., Dean	Aug. 15	May 11	6
7	Hahn. Med. Coll. of the Pacific, San Francisco.—H.	364,677	19	4	5	1	....	31	33	155	100	100	100	James W. Ward, M.D., Dean	Aug. 31	April 23	7
8	College of Phys. and Surg., San Francisco.—R.	364,677	40	....	11	....	....	60	32	105	100	100	125	Winslow Anderson, M.D., President	Sept. 14	May 14	8
9	Oakland College of Med. and Surg., Oakland.—R.	73,812	17	....	4	....	....	33	36	165	160	150	175	Edward N. Ewer, M.D., Registrar	Aug. 15	May 21	9
10	Univ. of Southern California, Los Angeles.—R. (b)	102,479	61	11	15	3	....	61	35	....	....	150	150	W. Jarvis Barlow, M.D., Dean	Sept. 15	June 10	10
11	College of Physicians and Surgeons, Los Angeles.—R.	102,479	28	4	5	0	....	42	36	135	132	107	132	Charles W. Bryson, M.D., Dean	Sept. 15	June 15	11
12	California Eclectic Medical College, Los Angeles.—E.	102,479	7	....	4	....	....	27	32	200	200	200	200	J. A. Munk, M.D., Dean	Sept. 13	May 21	12
	COLORADO		176	21	34	7	12										
13	Denver and Gross College of Medicine, Denver.—R.	151,920	102	7	22	1	8	71	32	130	131	103	126	Frost C. Buchtel, M.D., Secretary	Sept. 28	May 26	13
14	Denver College of Phys and Surgs., Denver.—P.	151,920	25	9	2	5	1	46	32	125	126	113	126	David A. Strickler, M.D., Dean	Sept. 6	May 12	14
15	University of Colorado School of Med., Boulder.—R.	12,000	49	5	10	1	3	47	35	52	52	52	52	William P. Harlow, M.D., Dean	Sept. 13	June 8	15
	CONNECTICUT		141	....	15	....	1										
16	Yale Medical School, New Haven.—R.	121,227	141	....	15	....	1	61	35	168	158	150	160	Herbert E. Smith, M.D., Dean	Sept. 30	June 22	16
	DISTRICT OF COLUMBIA		442	8	74	0	17										
17	George Washington Univ., Dept. of Med. Wash.—R.	307,716	161	5	33	0	7	82	32	150	150	150	150	William C. Borden, M.D., Dean	Sept. 29	June 1	17
18	Georgetown Univ., School of Med., Washington.—R.	370,716	89	....	15	....	3	63	33	150	150	150	150	George M. Kober, M.D., Dean	Oct. 1	June 11	18
19	Howard University, Med. Dept., Washington	307,716	202	3	26	0	7	52	32	105	100	100	107	William C. McNeill, M.D., Secretary	Oct. 1	June 1	19
	GEORGIA		764	5	141	1	16										
20	Atlanta College of Phys and Surg., Atlanta.—R.	104,984	280	....	37	....	9	51	28	80	80	100	100	W. S. Elkins, M.D., Dean	Sept. 27	May 1	20
21	Atlanta School of Medicine, Atlanta.—	104,984	281	....	51	....	2	40	28	70	70	80	80	Edward G. Jones, M.D., Proctor	Oct. 1	May 1	21
22	Georgia Coll. of Eclectic Med. and Surg., Atlanta.—E	104,984	64	2	14	1	2	20	28	80	80	80	105	Elzie B. Thomas, M.D., Proctor	Sept. 21	April 21	22
23	Hospital Medical College, Atlanta.—E.	104,984	40	3	17	0	1	24	26	80	80	80	110	W. Bernard Lingo, M.D., Dean	Sept. 15	April 1	23
24	Medical College of Georgia, Augusta.—R.	43,125	99	....	22	....	2	34	28	90	85	100	100	Joseph Eve Allen, M.D., Dean	Oct. 1	May 1	24
	ILLINOIS		2597	281	563	40	95										
25	American Medical Missionary College, Chicago.—R.	2,049,185	36	24	1	4	....	32	35	83	82	75	75	E. L. Eggleston, M.D., Secretary, Battle Creek, Mich.	Sept. 14	June 10	25
26	Bennett Medical College, Chicago.—R.	2,049,185	175	11	34	5	....	57	32	105	100	100	100	John D. Robertson, M.D., President	Sept. 21	May 23	26
27	Chicago College of Medicine and Surgery.—R.	2,049,185	372	24	73	7	....	71	30	120	115	100	115	Henry S. Tucker, M.D., Dean	Sept. 28	May 16	27
28	College of Medicine and Surgery, Chicago.—Ph.M.	2,049,185	26	7	9	1	....	49	30	115	110	110	135	William F. Scharre, M.D., Secretary	Sept. 21	May 12	28
29	College of Physicians and Surgeons, Chicago.—R.	2,049,185	476	41	116	14	....	108	32	145	115	150	175	William E. Quine, M.D., Dean	Oct. 1	June 8	29
30	Hahnemann Med. College and Hospital, Chicago.—H.	2,049,185	116	14	23	2	....	86	31	100	100	100	100	W. Henry Wilson, M.D., Registrar	Sept. 21	May 15	30
31	Hering Medical College, Chicago.—H.	2,049,185	33	7	8	2	3	50	32	100	100	100	100	Robert N. Morris, M.D., Dean	Sept. 23	June 2	31
32	Illinois Medical College, Chicago.—R.	2,049,185	58	4	16	0	....	58	32	130	130	125	125	J. F. Burkholder, M.D., President	Sept. 2	April 29	32
33	Jenner Medical College, Chicago.—R.*	2,049,185	102	10	10	2	....	50	10	110	110	110	110	John D. MacKellar, M.D., Registrar	Aug. 30	July 1	33
34	National Medical University, Chicago.—P.*	2,049,185	135	15	11	1	3	36	36	150	150	150	150	L. D. Rogers, M.D., Dean	Oct. 1	June 30	34
35	Northwestern University Med. School, Chicago.—R.	2,049,185	537	84	172	0	23	113	31	194	200	191	185	Charles Louis Mix, M.D., Secretary	Oct. 5	May 29	35
36	Reliance Medical College.—R.*	2,049,185	79	4	17	1	4	65	39	130	130	125	125	J. F. Burkholder, M.D., President	Sept. 7	June 29	36
37	Rush Medical College, Chicago.—R.	2,049,185	452	36	73	1	62	230	31	180	180	180	180	John M. Dodson, M.D., Dean	Oct. 1	June 18	37
	INDIANA		278	7	68	1	11										
38	Indiana University, School of Med., Indianapolis—R.	219,154	259	7	63	1	11	182	36	100	100	130	135	B. D. Myers, M.D., Sec'y., Bloomington; E. D. Clark, M.D., Sec'y., Indianapolis	Sept. 21	June 22	38
39	Physiomedical Coll. of Indiana, Indianapolis.—Ph.M.	219,154	19	....	5	....	....	....	....	....	....	....	....	C. T. Bedford, M.D., Dean	Sept. 7	May 3	39
	IOWA		433	25	69	4	13										
40	Drake University College of Med., Des Moines.—R.	78,323	119	11	16	3	2	46	35	75	75	75	75	William W. Pearson, M.D., Dean	Sept. 20	June 15	40
41	Sioux City College of Medicine, Sioux City.—R.	42,520	20	....	6	....	....	....	....	....	....	....	....	F. E. Franchere, M.D., Dean	....	....	41
42	State Univ. of Iowa, Coll. of Med., Iowa City.—R.	8,497	254	12	40	1	10	32	35	60	50	50	60	Walter L. Bierring, M.D., Vice-Dean	Sept. 20	June 15	42
43	State University of Iowa, College of Homeopathic Medicine, Iowa City.—H.	8,497	40	2	7	0	1	25	35	60	50	50	60	George Royal, M.D., Dean	Sept. 20	June 15	43
	KANSAS		200	8	30	1	1										
44	Kansas Medical College, Topeka.—R.	41,886	66	2	17	0	....	47	35	65	65	65	65	William E. McVey, M.D., Dean	Sept. 14	June 8	44
45	Univ. of Kansas, School of Med., Kansas City.—R (c)	77,912	85	5	7	0	1	79	35	60	60	100	100	Mervin T. Sudler, M.D., Dean, Lawrence; George H. Hoxie, M.D., Dean, Rosedale	Sept. 15	June 8	45
46	Western Eclec. Coll. of Med. and Surg., Kan. Cy.—E	77,912	49	1	6	1	....	32	30	90	95	100	115	William H. Smith, M.D., Secretary	Sept. 6	April 30	46

	KENTUCKY		754	5	186	2	....										
47	Louisville National Medical College, Louisville.—R..	226,129	38	2	3	1	....	28	30	60	55	55	75	E. S. Porter, M.D., Dean	Oct. 1	May 18	47
48	Southwestern Homeopathic College, Louisville.—H....	226,129	10	3	2	1	....	23	30	75	75	75	95	George S. Coon, M.D., Dean	Oct. 6	May 19	48
49	University of Louisville, Med. Dept., Louisville.—R..	226,129	706	....	181	....	....	90	30	100	100	100	125	Thomas C. Evans, M.D., Dean	Nov. 15	June 30	49
	LOUISIANA		463	....	109	....	30										
50	Flint Medical College, New Orleans.—R.	314,146	24	0	6	0	....	15	30	53	53	53	60	J. W. Thomas, M.D., Dean	Sept. 22	May 12	50
51	Tulane University Med. Dept., New Orleans.—R.	314,146	439	....	103	....	30	73	30	150	150	150	150	Isadore Dyer, M.D., Dean	Oct. 1	May 18	51
	MAINE		81	....	18	....	8										
52	Medical School of Maine, Portland.—R.	55,167	81	....	18	....	8	35	32	120	110	110	110	Alfred Mitchell, M.D., Dean, Brunswick.	Oct. 21	June 22	52
	MARYLAND		1298	45	301	8	67										
53	Atlantic Medical College, Baltimore—R. (d)	553,669	43	...	25	....	....	50	30	95	95	95	105	Eldridge C. Price, M.D., Dean	Oct. 1	June 3	53
54	Baltimore Medical College, Baltimore—R.	553,669	307	...	57	....	....	71	32	125	125	125	125	David Streett, M.D., Dean	Sept. 20	May 25	54
55	College of Physicians and Surgeons, Baltimore.—R..	553,669	252	....	46	....	1	57	32	155	155	155	185	Charles F. Bevan, M.D., Dean	Oct. 1	June 1	55
56	Johns Hopkins Univ., Med. Dept., Baltimore.—R....	553,669	272	25	47	3	50	112	33	200	200	200	200	William H. Howell, M.D., Dean	Oct. 5	June 14	56
57	Maryland Medical College, Baltimore.—R.	553,669	95	....	37	..	...	41	33	86	86	86	110	Harry Gross, M.D., Dean	Sept. 15	June 1	57
58	University of Maryland, School of Med., Baltimore..	553,669	329	....	89	....	16	62	32	155	155	155	185	R. Dorsey Coale, M.D., Dean	Oct. 1	June 1	58
59	Woman's Medical College of Baltimore.—R.	553,669	....	20	...	5	....	32	22	106	106	106	80	John R. Abercrombie, M.D., Dean	Oct. 1	June 1	59
	MASSACHUSETTS		857	79	133	11	66										
60	Boston University, School of Medicine.—H.	602,278	69	20	15	3	8	61	31	127	127	127	155	John P. Sutherland, M.D., Dean	Oct. 7	June 1	60
61	College of Physicians and Surgeons, Boston.—R.	602,27	157	15	11	1	....	30	36	80	105	105	135	Charles H. Cobb, M.D., Dean	Sept. 16	June 15	61
62	Harvard Medical School, Boston.—R.	602,278	285	....	55	....	52	166	36	220	208	200	203	Henry A. Christian, M.D., Dean	Sept. 30	June 30	62
63	Tufts College Medical School, Boston.—R.	602,278	346	38	52	7	6	103	32	155	155	155	155	Frederic M. Briggs, M.D., Secretary	Sept. 29	May 26	63
	MICHIGAN		651	29	134	6	23										
64	Detroit College of Medicine, Detroit.—R.	353,535	161	....	38	....	....	104	32	115	120	90	140	F B. Walker, M.D., Registrar	Sept. 22	May 26	64
65	Detroit Homeopathic College, Detroit.—H.	353,535	32	2	7	0	....	36	32	95	85	75	95	J. M. Griffin, M.D., Registrar	Sept. 14	May 1	65
66	Univ. of Michigan, Dept. of Med., Ann Arbor.—R.(e)	14,645	383	21	60	5	21	63	35	105	95	95	55	Victor C. Vaughan, M.D., Dean	Oct. 5	June 30	66
67	University of Michigan, Homeo. Coll., Ann Arbor.—H	14,645	75	6	20	1	2	11	35	105	95	95	55	W. B. Hinsdale, M.D., Dean	Oct. 5	June 30	67
	MINNESOTA		238	10	61	3	26										
68	Univ. of Minn., Coll. of Med. and Surg., Minneapolis	273,825	235	10	45	2	26	111	35	104	107	104	102	F. F. Wesbrook, M.D., Dean	Sept. 14	June 9	68
69	Univ. of Minn., Coll. of Homeo. Med. and Surg.-H.(f)	273,825	3	....	1	....	....	...	..	....	....	....	....	....	....	....	69
70	Hamline Univ., Med. Dept., Minneapolis.—R. (g)..	273,825	.....	....	15	1	....	...	..	....	....	....	....	....	....	....	70
	MISSISSIPPI		126	3	15	....	...										
71	University of Mississippi, Med. Dept., Vicksburg.—R	15,710	27	....	....	....	....	30	32	75	75	75	75	W. S. Leathers, M.D., Dean, University; Wm. Krauss, M.D., Dean, Vicksburg..	Sept. 23	June 1	71
72	Mississippi Medical College, Meridian—R.	20,503	99	3	15	0	..	19	28	85	85	75	100	T. A. Barber, M.D., Dean	Oct. 1	April 30	72
	MISSOURI		1171	34	286	10	22										
73	University of Missouri, Med. Dept., Columbia.—R.†.	8,000	44	3	6	0	1	27	34	75	70	....	....	C. M. Jackson, M.D., Dean	Sept. 23	June 9	73
74	Kansas City Hahnemann Med. Coll., Kansas City.—H	182,376	39	7	12	2	....	44	32	105	100	100	100	William E. Cramer, M.D., Dean	Sept. 8	May 17	74
75	University Medical College, Kansas City.—R.	182,376	161	....	47	...	2	6	2	100	100	100	125	J. M. Frankenburger, M.D., Dean	Sept. 8	May 13	75
76	Ensworth Medical College, St. Joseph.—R.	118,004	72	....	24	...	...	31	31	90	95	75	95	T. E. Potter, M.D., Secretary	Sept. 20	May 10	76
77	American Medical College, St. Louis.—E.	649,320	25	3	6	1	....	28	31	80	80	80	100	J. J. Link, M. D., Dean	Sept. 1	May 4	77
78	Barnes Medical College, St. Louis.—R.	649,320	117	7	33	3	....	61	32	100	100	100	100	C.M. Ament, M.D., Secretary	Sept. 14	May 14	78
79	Hippocratean College of Medicine, St. Louis.—R.*..	649,320	28	3	0	0	....	2	33	105	100	100	125	Emory Lanphear, M.D., Dean	Sept. 6	June 15	79
80	Homeopathic Med. Coll. of Missouri, St. Louis.—H.(h)	649,320	13	2	2	0	....	..	.	....	....	....	....	....	....	....	80
81	St. Louis University, School of Medicine.—R.	649,320	213	....	47	....	15	12	32	110	110	110	110	E. P. Lyon, M.D., Dean	Oct. 1	May 30	81
82	St. Louis College of Physicians and Surgeons.—R....	649,320	226	8	62	4	....	3	32	80	75	75	85	Waldo Briggs, M.D., Dean	Sept. 9	May 7	82
83	Washington University, Med. Dept., St. Louis.—R..	649,320	200	1	48	0	4	9	33	137	133	117	102	William H. Warren, Ph.D., Dean	Sept. 21	June 2	83
	NEBRASKA		347	20	51	6	13										
84	Creighton Medical College, Omaha.—R.	124,167	166	11	27	3	1	51	32	105	100	100	105	D. C. Bryant, M.D., Dean	Sept. 1	May 2	84
85	Univ. of Nebr., Coll. of Med., Lincoln and Omaha.—R	124,167	117	5	8	1	7	84	32	100	100	100	100	Harold Gifford, M.D., Dean, Omaha	Sept. 21	May 19	85
86	Lincoln Medical College, Lincoln.—E.	48,232	40	2	8	1	4	44	35	80	75	75	85	R. H. Spradling, M.D., Secretary	Sept. 9	June 5	86
87	Nebraska College of Medicine, Lincoln—R.(h)	48,232	21	2	8	1	1	...	...	....	....	....	....	....	....	....	87
	NEW HAMPSHIRE		58	....	14	....	6										
88	Dartmouth Medical School, Hanover.—R.	1,681	58	....	14	....	6	24	36	100	100	100	100	William T. Smith, M.D., Dean	Sept. 24	June 30	88
	NEW YORK		2048	76	421	8	86										
89	Albany Medical College, Albany.—R.	98,537	180	....	37	....	6	65	31	130	145	120	130	Willis G. Tucker, M.D., Registrar	Sept. 21	May 17	89
90	Columbia Univ., Coll. of Phys. and Surg., N. Y.—R.	4,113,043	312	....	82	....	55	163	33	255	250	250	275	Samuel W. Lambert, M.D., Dean	Sept. 22	June 1	90
91	Cornell University Medical College, New York.—R..	4,113,043	107	20	52	2	9	167	34	190	185	185	200	W. M. Polk, M.D., Dean	Sept. 29	June 15	91
92	Eclectic Medical College of the City of New York.—E.	4,113,043	86	10	9	0	...	39	32	125	125	125	155	George W. Boskowitz, M.D., Dean	Sept. 15	May 15	92
93	Fordham University School of Med., New York.—R.	4,113,043	43	....	11	....	1	73	29	195	190	190	180	James J. Walsh, M.D., Dean	Sept. 30	May 23	93
94	Long Island College Hospital, New York.—R.	4,113,043	364	....	75	....	...	107	32	200	200	160	195	Joseph H. Raymond, M.D., Secretary..	Sept. 27	June 1	94
95	New York Homeopathic Med. Col. and Hospital.—H.	4,113,043	109	....	16	....	....	74	30	130	130	125	155	R. S. Copeland, M.D., Dean	Oct. 6	May 12	95
96	New York Med. Coll., and Hosp. for Women.—H....	4,113,043	.....	21	....	4	...	38	30	....	....	....	....	Helen Cooley Palmer, M.D., Dean	Oct. 1	May 14	96
97	Univ. and Bellevue Hosp. Med. Col., New York.—R.	4,113,043	415	....	74	....	8	123	32	200	200	200	200	Egbert Le Fevre, M.D., Dean	Sept. 29	June 1	97
98	Syracuse University, College of Med., Syracuse.—R.	118,880	136	13	31	2	5	57	32	181	191	151	166	John L. Heffron, M.D., Dean	Oct. 5	June 8	98
99	University of Buffalo, Medical Dept., Buffalo.—R....	381,819	176	9	34	0	2	97	32	185	180	110	140	Matthew D. Mann, M.D., Dean	Sept. 27	May 27	99
	NORTH CAROLINA		384	1	51	....	4										
100	Leonard Medical School, Raleigh.—R.	14,225	125	.....	22	.....	2	10	30	15	15	15	25	James McKee, M.D., Dean	Sept. 30	May 12	100
101	University of N. Carolina, Med. Dept., Raleigh.—R.	14,225	113	.....	12	.....	..	15	35	114	116	75	80	I. H. Manning, M.D., Dean, Chapel Hill; H. A. Royster, M.D., Dean, Raleigh	Sept. 6	June 1	101
102	North Carolina Medical College, Charlotte.—R.	22,000	93	1	17	0	2	29	30	85	85	85	100	W. O. Nisbet, M.D., Dean	Sept. 8	April 30	102
103	Wake Forest School of Medicine, Wake Forest.—R.†	823	53	....	....	....	....	10	34	100	100	....	....	John Brewer Powers, M.D., Dean	Sept. 6	May 25	103
	NORTH DAKOTA		21	1	....	....	....										
104	University of North Dakota, Medical Department, University (Grand Forks)—R.†	10,127	21	1	....	....	....	16	35	50	50	....	....	M. A. Brannon, A.M., Dean	Sept. 21	June 16	104

R, Regular; H, Homeopathic; E, Eclectic; P, Panpathic.

TABLE 1.—STATISTICS OF MEDICAL COLLEGES IN THE UNITED STATES—(Continued)

Number.	NAME AND LOCATION OF COLLEGE	Population of city where college is located. (Census Bureau estimate, 1906.)	No. of students registered 1908-9.		Graduates 1909.		Grads. with A.B. or B.S.	No. of teachers.	Weeks in college year.	Total fees. (Dollars.)				Executive Officer.	Session of 1909-10.		Number.
			Men.	Women.	Men.	Women.				1st year.	2nd year.	3rd year.	4th year.		Begins 1909.	Ends 1910.	
	OHIO		767	23	169	8	40										
105	Cleveland College of Phys. and Surg., Cleveland.—R.	460,327	83	9	15	1	3	61	32	130	130	117	110	R. E. Skeel, M.D., Dean	Oct. 1	June 1	105
106	Cleveland Homeopathic Med. College, Cleveland.—H.	460,327	38	3	11	2	....	57	31	125	125	125	125	George H. Quay, M.D., Dean	Sept. 23	May 11	106
107	Western Reserve Univ., Med. Dept., Cleveland.—R.	460,327	98	....	25	....	22	98	31	125	125	125	125	F. C Waite, M.D., Secretary	Oct. 1	June 16	107
108	Eclectic Medical Institute, Cincinnati.—E.	345,230	81	....	16	....	1	25	31	90	90	90	90	John K. Scudder, M.D., Secretary	Sept. 20	May 4	108
109	Medical College of Ohio, Cincinnati.—R. (i)	345,230	118	2	30	1	7	....	...	....	....	....	....	....	....	....	109
110	Miami Medical College, Cincinnati.—R. (i)	345,230	71	2	16	1	2	....	...	....	....	....	....	....	....	....	110
111	Ohio-Miami Med. Col. of the Univ. of Cincinnati.—R.	345,230	...	....	...	...	...	128	33	130	125	125	150	E. Otis Smith, M.D., Secretary	Sept. 27	June 4	111
112	Pulte Medical College, Cincinnati.—H.	345,230	11	2	3	1	...	32	32	80	75	75	100	C. E. Walton, M.D., Dean	Sept. 30	May 25	112
113	Starling-Ohio Medical College, Columbus.—R.	145,414	228	3	48	2	1	57	31	115	110	105	125	George M. Waters, M.D., Dean	Sept. 22	May 17	113
114	Toledo Medical College, Toledo.—R.	159,980	36	2	5	0	1	50	32	100	100	100	100	James Donnelly, M.D., Dean	Oct. 1	May 26	114
	OKLAHOMA		57	4	6	...	...										
115	Epworth College of Medicine, Oklahoma City.—R.	20,990	48	3	6	0	....	13	29	100	100	75	105	A. K. West, M.D., Dean	Oct. 1	May 9	115
116	Univ. of Oklahoma, School of Med., Norman.—R.†	3,040	9	1	...	...	...	12	35	**	**	...	....	Charles S. Bobo, M.D., Dean	Sept. 11	June 9	116
	OREGON		100	3	21	2	2										
117	University of Oregon, Med. Dept., Portland.—R.	101,884	72	2	14	1	2	13	31	112	138	107	58	S. E. Josephi, M.D., Dean	Sept. 13	May 2	117
118	Willamette University, Medical Dept., Salem.—R.	7,287	28	1	7	1	....	18	30	133	123	82	58	W. H. Byrd, M.D., Dean	Oct. 5	May 29	118
	PENNSYLVANIA		2374	157	432	29	69										
119	Hahnemann Med. Coll. and Hosp., Philadelphia.—H.	1,441,735	187	...	58	...	6	73	32	155	150	150	160	Herbert L. Northrop, M.D., Dean	Sept. 27	June 1	119
120	Jefferson Medical College, Philadelphia.—R	1,441,735	591	....	139	....	12	120	31	180	180	180	180	James W. Holland, M.D., Dean	Sept. 21	June 6	120
121	Medico-Chirurgical College of Philadelphia.—R.	1,441,735	461	....	56	....	....	95	32	150	150	150	150	Seneca Egbert, M.D., Dean	Sept. 21	June 6	121
122	Temple University Med. Dept., Philadelphia.—R.	1,441,735	230	15	16	2	3	70	34	150	150	150	150	I. Newton Snively, M.D., Dean	Sept. 15	June 4	122
123	University of Penn., Dept. of Med., Philadelphia.—R	1,441,735	511	....	110	....	37	156	31	200	200	200	200	Charles H. Frazier, M.D., Dean	Sept. 21	June 15	123
124	Woman's Med. Coll. of Penn., Philadelphia.—R.	1,441,735	....	125	...	24	4	57	33	140	140	140	140	Clara Marshall, M.D., Dean	Sept. 22	June 1	124
125	University of Pittsburg, Med. Dept., Pittsburg.—R.	375,028	301	17	53	3	7	13	33	....	...	....	....	Thomas S. Arbuthnot, M.D., Dean	Oct. 5	June 15	125
	PHILIPPINE ISLANDS		212	....	34	...	...										
126	Philippine Medical School, Manila.—R. (j)	219,928	52	....	8	...	....	12	35	....	...	....	....	Harry T. Marshall, M.D., Secretary	June 7	Feb. 26	126
127	Univ. of St. Thomas, Faculty of Med., Manila.—R. (k)	219,928	160	....	26	...	....	154	35	....	...	....	....	Blas C. Aleuaz, Lic., Secretary	....	....	127
	SOUTH CAROLINA		213	....	38	...	...										
128	Medical College of South Dakota, Charlestown.—R.	50,317	213	....	38	....	....	31	28	100	100	75	75	Robert Wilson, Jr., M.D., Dean	Oct. 1	May 4	128
	SOUTH DAKOTA		9	2	....	....	....										
129	Univ. of So. Dakota, Coll. of Med., Vermillion.—R.	2,183	9	2	....	....	....	8	35	60	60	....	....	C. P. Lommen, B.S., Dean	Sept. 13	June 9	129
	TENNESSEE		1712	14	402	4	42										
130	Knoxville Medical College, Knoxville.—R.	36,051	22	1	6	1	2	11	26	45	40	45	50	H. M. Green, M.D., Secretary	Nov. 1	May 31	130
131	Tennessee Medical College, Knoxville.—R.	36,051	84	1	13	0	...	27	28	75	75	75	100	E. R. Zemp, M.D., Registrar	Oct. 1	May 4	131
132	Meharry Medical College, Nashville.—R.	81,703	267	8	55	3	8	26	28	53	55	55	60	G. W. Hubbard, M.D., Dean	Sept. 15	April 14	132
133	Univ. of Nashville, Med. Dept., Nashville.—R. (l)	81,703	228	....	61	....	10	....	...	...	....	....	....	....	....	....	133
134	Univ. of Tennessee, Dept. of Med., Nashville.—R. (l)	81,703	119	....	11	....	....	....	...	...	....	....	....	....	....	....	134
135	Universities of Nashville and Tennessee, Department of Medicine, Nashville.—R.	81,703	....	....	....	....	....	41	30	125	125	125	150	R. O. Tucker, M.D., Dean	Sept. 15	May 2	135
136	Vanderbilt University, Med. Dept., Nashville.—R.	81,703	209	....	49	....	....	15	30	130	130	130	155	William L. Dudley, M.D., Dean	Sept. 15	May 1	136
137	College of Physicians and Surgeons, Memphis.—R.	125,235	84	....	11	....	....	15	30	100	100	100	125	Heber Jones, M.D., Dean	Sept. 15	May 1	137
138	Memphis Hospital Medical College, Memphis.—R.	125,235	112	....	93	....	13	34	28	75	75	75	100	W. B. Rogers, M.D., Dean	Oct. 1	May 1	138
139	Univ. of West Tennessee, Med. Dept., Memphis.—R.	125,235	25	....	8	....	....	18	28	40	40	40	50	M. V. Lynk, M.D., Dean	Sept. 11	April 11	139
140	Chattanooga Medical College, Chattanooga.—R.	34,297	108	4	21	0	1	21	29	75	75	75	75	J. R. Rathmell, M.D., Dean	Sept. 22	May 2	140
141	Univ. of the South, Med. Dept., Sewanee.—R. (m)	500	125	....	36	....	5	22	28	....	....	....	....	John S. Cain, M. D., Dean	April 1, '09	Oct. 28, '09	141
	TEXAS		420	12	80	1	2										
142	Fort Worth University, Med. Dept., Ft. Worth.—R.	27,096	99	1	19	0	1	38	31	105	105	105	130	William R. Thompson, M.D., Dean	Sept. 27	May 13	142
143	University of Texas, Dept. of Med., Galveston.—R.	34,355	203	8	36	1	1	25	32	55	30	20	5	William S. Carter, M.D., Dean	Oct. 1	May 31	143
144	Baylor University, College of Medicine, Dallas.—R.	52,793	50	3	16	0	....	36	28	80	75	75	100	Edward H. Cary, M.D., Dean	Oct. 1	May 1	144
145	Southwestern University Medical College, Dallas.—R.	52,793	68	...	9	....	....	32	28	110	105	100	125	John O. McReynolds, M.D., Dean	Sept. 29	April 29	145
	UTAH		17	1	...	....	....										
146	Univ. of Utah, Dept. of Med., Salt Lake City.—R.†	61,202	17	1	...	....	....	21	34	65	65	....	....	Byron Cummings, A.M., Dean	Sept. 16	June 1	146
	VERMONT		168	....	33	....	4										
147	University of Vermont, Coll. of Med., Burlington.—R.	21,070	168	....	33	....	4	56	30	130	125	125	150	James N. Jenne, M.D., Secretary	Nov. 10	June 29	147
	VIRGINIA		434	....	95	....	8										
148	Medical College of Virginia, Richmond.—R.	87,246	208	....	35	....	3	18	32	100	100	100	130	Christopher Tompkins, M.D., Dean	Sept. 11	May 13	148
149	University College of Medicine, Richmond.—R.	87,246	110	....	42	....	5	75	32	100	100	100	100	A. L. Gray, M.D., Dean	Sept. 14	May 17	149
150	Univ. of Virginia, Dept. of Med., Charlottesville.—R.	6,449	83	....	18	....	....	42	36	150	140	120	100	Richard H. Whitehead, M.D., Dean	Sept. 16	June 15	150

	WEST VIRGINIA		40	....	....	....	....										
151	West Va. Univ., Coll. of Med., Morgantown.—R (n)	6,000	40	....	....	....	....	8	36	25	25	....	....	John N. Simpson, M.D., Dean..........	Sept. 20	June 15	151
	WISCONSIN		244	14	35	3	5										
152	Marquette University, Med. Dept., Milwaukee.—R.	317,903	157	9	20	3	3	66	30	135	135	135	150	Warren B. Hill, M.D., Dean..........	Oct. 5	May 23	152
153	Wisconsin Coll. of Phys. and Surg., Milwaukee.—R.	317,903	58	2	15	0	2	53	31	125	125	125	125	Thos. C. Phillips, M.D., Dean..........	Oct. 1	May 23	153
154	Univ. of Wisconsin, Coll. of Med., Madison.—R (o)	25,128	29	3	....	....	....	45	35	60	80	....	....	Charles R. Bardeen, M.D., Dean..........	Sept. 27	June 22	154
	CANADA		1731	24	352	4	76										
155	Dalhousie Univ., Halifax Med. Coll., Halifax, N. S.	50,000	57	4	8	0	....	27	32	...	...	....	....	A. W. H. Lindsay, M.D., Secretary......	Aug. 26	April 28	155
156	Queen's Univ., Faculty of Med., Kingston, Ont. (p)	17,961	208	....	40	....	7	26	30	100	100	100	130	A. R. B. Williamson, M.D., Secretary....	Sept. 29	April 27	156
157	Western Univ., Faculty of Med., London, Ont.......	18,000	101	....	25	....	5	20	30	100	100	100	100	W. E. Waugh, M.D. Registrar..........	Sept. 21	May 1	157
158	McGill University, Med. Faculty, Montreal, Q. (p)..	100,000	323	....	71	....	18	95	33	133	148	154	184	John W. Scane, M.D., Registrar........	Oct. 1	June 8	158
159	Laval University, Med. Faculty, Montreal, Q. (p)..	100,000	214	....	44	....	32	50	35	110	118	126	138	E. P. Lachapelle, M.D., Dean..........	Sept. 8	June 10	159
160	Laval University, Med. Faculty, Quebec, Q. (p)....	68,840	95	....	11	....	11	17	35	60	60	60	60	Laurent Catellier, M.D., Dean	Sept. 15	June 20	160
161	Univ. of Toronto, Med. Faculty, Toronto, Ont. (p)..	328,911	611	19	89	1	....	140	30	150	150	150	150	A. Primrose, M.D., Secretary............	Oct. 1	May 13	161
162	University of Manitoba, Manitoba Medical College, Winnepeg. (p)	105,000	111	1	36	0	3	40	29	130	125	125	125	H. H. Chown, M.D., Dean................	Sept. 27	May 1	162

R, Regular; H, Homeopathic; E, Eclectic; Ph.M., Physiomedical; P, Panpathic.

REFERENCES TO TABLE 1

Heavy faced figures show totals by states.

* Night schools. ** No tuition is charged.

† Colleges giving only the first two years of the medical course.

(a) Now the Leland Stanford Junior University College of Medicine.

(b) Now the Los Angeles Medical Department of the University of California.

(c) For non-residents of Kansas the fees for each of the first two years are $70.

(d) The number of graduates given includes eight post-graduates.

(e) For non residents of Michigan the total fees for each of the four years respectively are $130, $105, $105 and $35.

(f) Closed by the Board of Regents of the University of Minnesota, an elective chair each in materia medica and therapeutics in the College of Medicine and Surgery being substituted.

(g) Classes of 1910, 1911 and possibly 1912 will complete their work in the University of Minnesota College of Medicine and Surgery, but will obtain their degrees from Hamline University.

(h) These colleges have been suspended.

(i) These colleges have merged, forming the Ohio-Miami Medical College of the University of Cincinnati.

(j) The expenses of scholarship students including transportation, tuition and board are borne by the government.

(k) Number of students approximate; graduates given for 1908.

(l) These colleges have just merged, forming the Medical Department of the Universities of Nashville and Tennessee.

(m) Will be suspended after the close of the present session.

(n) Fees for non-residents of West Virginia are $50 per year.

(o) Non-residents of Wisconsin pay an additional fee of $50 per year.

(p) Total fees for the fifth year in the Canadian colleges are the same as for the fourth year.

(Continued from page 545)

III. CONDUCT OF THE COLLEGE.

1. The medical college should literally observe its published requirements for admission, tuition, time of attendance on the session and graduation, which it should definitely set forth, together with complete lists of its matriculates and annual graduates, in regular annual catalogues or announcements.

2. New medical colleges may be recognized on application if on examination they are found to comply with the above requirements.

THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

The requirements for admission to and graduation from colleges holding membership are as follows:

Preliminary Education: (*a*) A bachelor's degree from an approved college or university. (*b*) A diploma from an accredited high school, normal school or academy requiring for admission evidence of the completion of an eight-year course in primary and intermediate grades, and for graduation not less than four years of study embracing not less than two years (4 points) of Latin, two years (four points) of mathematics, two years (4 points) of English, one year (2 points) of history, one year (2 points) of physics, and six years (12 points) of further credit in language, literature, history or science (*c*) An examination in the following branches totaling 30 points: A. Required. (16 points): Mathematics (4 points), English (4 points), History (2 points), Latin (4 points), Physics (2 points).

B. Elective (14 points): English, language and literature, 4 points; language, German, French, Spanish, or Greek, in each not less than 2 points; solid geometry and trigonometry (½ year each), 2 points; biology (one year) or botany and zoology (½ year each), 2 points; chemistry (1 year), 2 points; physical geography and geology (½ year each), 1 point; physiology and hygiene (½ year each), 1 point; astronomy (½ year), 1 point; drawing (½ year), 1 point. One point in any subject in a high school or academic course demands not less than five periods per week of forty-five minutes each for eighteen weeks. (*d*) Certificates from reputable instructors recognized by any state board of medical examiners duly authorized by law or by the superintendents of public instruction in states having no board of examination, may be accepted in lieu of any part of this examination. (*e*) This examination must be conducted by or under the authority of the board of examiners or of the superintendent of public instruction of the city or state in which the college is located as provided for in subsection (*d*). In no case shall it be conducted by any person connected with the faculty, medical or otherwise, of the institution to which the student is seeking admission.

A student may be allowed to enter on his medical work conditioned in not more than six points, and these conditions must be removed by satisfactory examination before he is allowed to enter on the second year of his medical course.

Advanced Standing: Colleges in membership in this Association may honor the official credentials presented by students from other colleges having the standard requirements maintained by members of this Association, excepting for the fourth year of their course, but no member shall admit a student to advanced standing without first communicating with the college from which such student desires to withdraw, and receiving from the dean of such college a direct written communication certifying to the applicant's professional and moral qualifications, and to the exact work he had done in said college.

CURRICULUM

	No. of Hours of Lectures.	Hours of Laboratory.	Hours of Clinics.	Total.
Histology	30	60	..	90
Embryology	30	60	..	90
Osteology	30	..	..	30
Anatomy	190	230	..	420
Physiology	180	120	..	300
Chemistry and Toxicology.....	100	200	..	300
Materia Medica	40	20	..	60
Pharmacology	40	20	..	60
Therapeutics	90	..	..	90
Bacteriology	40	100	..	140
Pathology	100	140	..	240
Medical Zoology, Postmortem Work and Clinical Microscopy	30	60	..	90
Physical Diagnosis	20	..	80	100
Practice of Medicine	180	..	360	540
Surgery	180	..	360	540
Obstetrics	100	..	60	160
Gynecology	50	..	110	160
Pediatrics	40	..	60	100
Eye and Ear	30	..	30	60
Nose and Throat	30	..	30	60
Mental and Nervous Diseases..	60	..	60	120
Electro-Therapeutics	20	..	40	60
Genito-Urinary Diseases.......	30	..	30	60
Dermatology and Syphilis.....	20	..	20	40
Hygiene and Public Health....	30	..	..	30
Dietetics	30	..	..	30
Medical Jurisprudence	30	..	..	30
	1,750	1,010	1,240	4,000

No time credit shall be given to holders of a Bachelor's degree, but subject credit can be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

Medical Education.—Candidates for the degree of Doctor of Medicine shall have attended four courses of study in four calendar

(Continued on page 552)

Number.	NAME OF COLLEGE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Number.
		Alabama 687	Arizona........12	Arkansas 384	California 282	Colorado 150	Connecticut 263	Delaware 51	Dist. of Col.....118	Florida 157	Georgia 659	Idaho 26	Illinois 1920	Indiana 610	Iowa 722	Kansas 387	Kentucky 497	Louisiana 458	Maine 174	Maryland 311	Massachusetts ...813	
1	Birmingham Medical College.—	153																1				1
2	University of Alabama, Med. Dept.—R.	175	1																			2
3	College of Phys. and Surg., Little Rock.—R.		3	56														6				3
4	University of Arkansas, Med. Dept.—R.	1		143									2	1	1	1	1	7				4
5	Cooper Medical College.—R.				72									2	5	2	1		1		2	5
6	University of California, Med. Dept.—R.				33								2									6
7	Hahnemann Medical College of the Pacific.—H				23																	7
8	College of Phys. and Surg., San Francisco.—R				18	1									3	1						8
9	Oakland College of Medicine and Surgery.—R.				15																	9
10	Univ. of Southern California, Coll. of Med.—I		1		16	2	1				1		5	2	7	3			2		2	10
11	College of Phys. and Surg., Los Angeles.—R.		1		4								1	2	3		1				1	11
12	California Eclec. Med. Coll., Los Angeles.—E				7																	12
13	Denver and Gross College of Medicine.—R.				1	63		1				1	4	2	7	2	1	1			1	13
14	Denver Coll. of Physicians and Surgeons					27											3					14
15	University of Colorado, Medical Dept.—R.					23						2	2	1	1	1					1	15
16	Yale Medical School, New Haven.—R.			1			101						3			1					6	16
17	George Washington Univ., Dept. of Med.—R.	1			1	1			57	1			3	1	1	2		3		5	3	17
18	Georgetown University, School of Med.—R.	1			3		3	1	23				3							3	3	18
19	Howard University, Medical Department.—R.	1		1			1	3	19	8	9		3	1				5		12	3	19
20	Atlanta Col. of Phys. and Surg., Atlanta.—R.	32					1			26	178						1	1				20
21	Atlanta School of Medicine.—R.	26	1							19	189							4			1	21
22	Georgia Coll. of Eclectic Med. and Surg.—E.	9		1						7	47											22
23	Hospital Medical College, Atlanta.—E.			2						5	29											23
24	Medical College of Georgia, Augusta.—R.									2	78											24
25	American Medical Missionary College.—R.	1			1						1		4	3	2	1						25
26	Bennett Medical College.—R.	1				1	2			1			99	7	4	1	4					26
27	Chicago College of Medicine and Surgery.—R.	3			1		1						169	36	14	10	3	1			1	27
28	College of Med. and Surg., Chicago.—Ph.M.												13	4	3	1					1	28
29	College of Phys. and Surg., Chicago.—R.			1	2	2				1		2	106	17	23	6	4					29
30	Hahnemann Med. Coll. and Hosp., Chicago. H												70	11	14	6					2	30
31	Hering Medical College, Chicago.—H					1				1			13	3	1		1			1	2	31
32	Illinois Medical College, Chicago.—R.†												33	22			1	1				32
33	Jenner Medical College, Chicago.—R.												112									33
34	National Medical University.—P.												150									34
35	Northwestern University Medical School.—R.	1		1	6	7					2	3	268	31	59	20	3	2				35
36	Reliance Medical College.—R.												83									36
37	Rush Medical College.—R.	3		4	9	2			1	1		3	176	25	46	25	2	2				37
38	Indiana University, School of Medicine.—R.												5	250			1				1	38
39	Physiomedical College of Indiana.—Ph.M.													19								39
40	Drake Univ. Coll. of Med., Des Moines.—R.												20	1	75	3						40
41	Sioux City Coll. of Med., Sioux City.—R.														20							41
42	State Univ. of Iowa, Coll. of Med.—R.												10		234		1		1	1		42
43	State Univ. of Iowa, Coll. of Homeo. Med.—H											1	1		34							43
44	Kansas Medical College, Topeka.—R.												1			65						44
45	University of Kansas, School of Medicine.—R.															80						45
46	Western Eclec. Coll. of Med. and Surg.—E.	1		2		1							2		3	10	1					46
47	Louisville Nat. Medical Coll., Louisville.—R.	2								1	1			4			21					47
48	Southwestern Homeopathic Med. College.—H.													5			8					48
49	University of Louisville, Med. Dept.—R.	7	2	17	3		1	1		3	8		24	63	7	5	305	19	1			49
50	Flint Medical College.R.†			1							1							12				50
51	Tulane Univ. of Louisiana, Med. Dept.—R.	55		10			1			6	11							204	1			51
52	Medical School of Maine.—R.				1														69		4	52
53	Atlantic Medical College.—R.†						1	1												30		53
54	Baltimore Medical College.—R.	1		2	3		27		3	1			1		1			1	9	27	37	54
55	College of Phys. and Surg., Baltimore.—R.	1					19	2			2					1				31	18	55
56	Johns Hopkins Med. School, Baltimore.—R.	7		4	11	1	15	1	3	2	10		8	6	4	4	8	4	4	41	6	56
57	Maryland Medical College.—R.						2	2	1		1		1	2			1		1	21	2	57
58	University of Maryland, School of Med.—R.				2		5	9		7	8		1	1	1	2	1		1	116	6	58
59	Woman's Medical College of Baltimore.—R.						1						1		1					3	1	59
60	Boston University, School of Medicine.—H.				1								2		1				5		61	60
61	College of Phys. and Surg., Boston.—R.				2		3			1									7		86	61
62	Harvard Medical School, Boston.—R.			1	10	3	4		1				5	3	3	2	3		13	1	159	62
63	Tufts College Medical School.—R.						6								2				23		306	63
64	Detroit College of Medicine.—R.								1				2	3							1	64
65	Detroit Homeopathic College, Detroit.—H.												2									65
66	University of Michigan, Dept. of Med.—R.	1			6	2			1	1	1	1	18	19	9		4		2		3	66
67	Univ. of Michigan, Homeopathic Coll.—H.								1				1	3	1	1		1				67
68	Univ. of Minn., Coll. of Med. and Surg.—R.		1										1		2	1						68
69	Univ. of Minn., Coll. of Homeo. M. and S.—H																					69
70	Univ. of Mississippi, Med. Dept., Oxford.—I										1						1	2				70
71	Mississippi Medical College, Meridian.—R.	5								1												71
72	Univ. of Missouri, Med. Dept., Columbia.—I			1									1		1							72
73	Kansas City Hahnemann Med. Coll.—H.†				1								2	1	3	16						73
74	University Medical College, Kansas City.—R.			1									1		3	65	1					74
75	American Medical College, St. Louis.—E.																					75
76	Barnes Medical College, St. Louis.—R.†			4									32	1	1	4	4	1				76
77	Ensworth Medical College, St. Joseph.—R.											1			8	12						77
78	Hippocratean College of Medicine.—R.												4									78
79	Homeopathic Medical College of Missouri.—H.†																					79
80	St. Louis University, School of Medicine.—R	1		4		2						3	61	4	13	6	1	2		1		80
81	St. Louis College of Phys. and Surg.—R.	2		6	1								93	3	12	3	4	1				81
82	Washington Univ., Med. Dept., St. Louis.—R.	1		4							1	1	43	2	4	1	2		1	1		82
83	John A. Creighton Medical College.—R.				2							1	1		46	3					1	83
84	University of Nebraska, Coll. of Med.—R.														5	1		1				84
85	Lincoln Medical College, Lincoln.—E.					1								1	1	1						85
86	Nebraska College of Medicine.—R.												1		1							86
87	Dartmouth Medical School.—R.						5						2						4		15	87
88	Albany Medical College.—R.																				9	88
89	Columbia Univ., Coll. of Phys. and Surg.—R.	4			3	1	10			1	2		3		2	2	2		2		4	89
90	Cornell University Medical College.—R.				1		1						1	1	1			1	1		6	90
91	Eclectic Med. Coll. of the City of New York.—E																					91
92	Fordham University School of Medicine.—R																				1	92
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

OF MEDICAL STUDENTS BY STATES

Number.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	Number.
	Michigan 491	Minnesota 317	Mississippi 593	Missouri 813	Montana 31	Nebraska 346	New Hampshire..103	New Jersey......451	New Mexico......8	New York........2123	Nevada 8	North Carolina...511	North Dakota....77	Ohio 929	Oklahoma 186	Oregon 116	Pennsylvania ...2159	Rhode Island.....99	South Carolina...333	South Dakota....57	Tennessee 537	Texas 751	Utah 75	Vermont 106	Virginia 182	Washington 89	West Virginia....271	Wisconsin 430	Wyoming 11	Hawaii, P.I., P.R.83	Foreign 539	Totals 21,933	
1			8									1			1				2			3										169	1
2			14																1													191	2
3			2	4															1		3	5			1							81	3
4				3											13		1				2	2							1			179	4
5		3		1		2				2	3			1		5	1	2					1								11	117	5
6											1																					36	6
7																																23	7
8				1						1												2		1						1	11	40	8
9												1				1																17	9
10	4	3		4		3				1			1	2			5					1		1				3			2	72	10
11				5		1		1	1	1				1		1												1			7	32	11
12																																7	12
13		1			2	2				3				4			4		1			1	2		3			1	1			109	13
14				1						1												1							1			34	14
15	2		1			1				3				5			1					2		2					3		3	54	15
16	1			2				1		12						1	4	2						2							4	141	16
17	2			1		1	1	1		10		5	1	4	4		9	1	4		3	1	1	2	11		5				10	156	17
18			1					2		7		1		2	1		9	5							6	1	2	3			9	89	18
19			4	4	1			5		6		6		6			11	2	7		3	5			28		4			47		205	19
20			4							4		4			2		1		20		1	1			1							280	20
21			7	1						1		12							13		1	2			1		2				1	281	21
22														1								1										66	22
23												1			1				2		1	2										43	23
24		1																	16			1			1							99	24
25	10		1	1						5				6			2		1		1							1			19	60	25
26	5	2		4		1		1		12		1		3	2		10		1	5						1		15			3	186	26
27	18	12	4	9		3				14			5	17	2		28	1		3		3	3				4	15			16	396	27
28	1	1												3								5									1	33	28
29	17	14		11	2	8				3		1	7	12	1	1				12		2	1			6	1	31		7	13	517	29
30	3	3		1						1				3			2			1					1	1	1	3			7	130	30
31	2		1	2						2							1					1						2	1		5	40	31
32												1		3			1															62	32
33																																112	33
34																																150	34
35	14	27	1	8	6	17				5			10	20	1	2	2			15	4	4	10			8		39	1	3	21	621	35
36																																83	36
37	10	8	4	19	3	12		1		5			7	28	2	9	3	1		4	2	4	10	1	1	5	1	34		3	12	488	37
38	1												1	3							2						1				1	266	38
39																																19	39
40		2		14	1	1				1			2	1	1					3						2		2			1	130	40
41																																20	41
42		3		2	2	2		1					1			1				5								2				266	42
43				1		2														1					1	1						42	43
44				2																												68	44
45				10																												90	45
46				8		4			1					3	8							4				1					1	50	46
47			2	1								1							1		2				1		1				2	40	47
48										1							1															13	48
49	2	8	26	24	1	1		4	1	6		5		7	3	2	13		5		20	29		2	12		61	2			6	706	49
50			8																			2										24	50
51			85									2		2	2				4		6	41			1						8	439	51
52							2			1								1													3	81	52
53										2							8								1							43	53
54						1	7	22		53		2		3			53	5	2		1	1		1	11	1	15				16	307	54
55					1			22		20		3		13			36	17			1		1		6		41				17	252	55
56		1	1	9	1	1	3	6		29		9		14		3	28	1	7		3	10			9	8	4	6	1		4	297	56
57								3		47		1		1			18		1						4		18				8	95	57
58		1		2			1	11		11		33		2	1		26	4	20		1			1	21		9			8	17	329	58
59								1		2		1							1						1		1			5	1	20	59
60							3			4				2		1	2	4						4							5	95	60
61			1				4			8								7				1		1	2		2				47	172	61
62	2	1		1		2	8	2		10		3		6	1	3	5	12	1			1				4			2		13	285	62
63		1					17		1	1				2				17						3							5	334	63
64	112	1								3				3			4											1		1	29	161	64
65	30													1																	1	34	65
66	189	5		4	3	2		1		34	1	2	2	38		2	18	1	3	9		2	1	2	1	4		4		1	7	404	66
67	33	1				1				24				7			3			2	1						1					81	67
68		207								1			14				1			7				1		2		7				245	68
69		3																														3	69
70			23																													27	70
71			96																													102	71
72				40											1	1						1								1		47	72
73	1			14		1				1							1			1	1					1		1			1	46	73
74				75	1	1			1						10		1									1			1		2	164	74
75				28																												28	75
76				68		1									2							6										124	76
77				48		2									1																	72	77
78				27																												31	78
79				15																												15	79
80	3	2		104		1				3				5	7		1		1			4	2					6			6	243	80
81				81	1	2				2	2		1		8							10						1			1	234	81
82			1	118		1				2				1	5						3					1		3		1	4	201	82
83	4	4		2		94				1			1	2		1	1			6			1			1		5				177	83
84						113																							2			122	84
85						33									1					3	1											42	85
86						23																									1	26	86
87							25	2						1										4								58	87
88							1	2		164							1		1											1		180	88
89		3	1	3	1		1	35		186		4	2	3	1	3	8	1	3			3				2	1	2			13	312	89
90					1	1		22		66				4		1	3					1			1					1	3	217	90
91								13		83																						96	91
92								1		33							1														5	43	92
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

TABLE 2.—SHOWING DISTRIBUTION

Number.	NAME OF COLLEGE	1 Alabama 687	2 Arizona.........12	3 Arkansas 331	4 California 282	5 Colorado 150	6 Connecticut 263	7 Delaware 51	8 Dist. of Col.......118	9 Florida 157	10 Georgia 659	11 Idaho 26	12 Illinois 1920	13 Indiana 610	14 Iowa 722	15 Kansas 387	16 Kentucky 197	17 Louisiana 156	18 Maine 171	19 Maryland 311	20 Massachusetts ...81	Number.
93	Long Island College Hospital.—R.					1								1						1	361	93
94	New York Homeo. Med. Coll. and Hosp.—H.†						1												1			94
95	New York Med. Coll. and Hosp. for Women.H																					95
96	University and Bellevue Hosp. Med. Coll.—R.				3	2	9			1			3				1			1	5	96
97	Syracuse University, College of Medicine.—R.				1		1									1						97
98	University of Buffalo, Medical Department.—R						1															98
99	Leonard Medical School, Raleigh.—R.	10							2	9	5							1		2	1	99
100	University of North Carolina, Med. Dept.—R.									1												100
101	North Carolina Medical College.—R.								1													101
102	Wake Forest School of Med., Wake Forest.—R									2												102
103	University of North Dakota, Med. Dept.—R.												1		1							103
104	Cleveland College of Phys. and Surg.—R.					1								1								104
105	Cleveland Homeopathic Medical College.—H.†				1																	105
106	Western Reserve University, Med. Dept.—R.												1	9	2							106
107	Eclectic Medical Institute.—E.			2		1	1				1		5	7		1	6					107
108	Medical College of Ohio.—R.													5		1	15					108
109	Miami Medical College.—R.												1	2			7					109
110	Pulte Medical College—H																					110
111	Starling-Ohio Medical College—R.												1	2	2		1					111
112	Toledo Medical College.—R.													2								112
113	Epworth University, Coll. of Med.—R.															2						113
114	University of Oklahoma, School of Med.—R.																					114
115	University of Oregon, Medical Dept.—R.				2							4			1							115
116	Willamette University, Medical Dept.—R.				1																	116
117	Hahnemann Med. Coll. and Hosp., Phila.—H.				1		3	3					2		4		4		4	2	1	117
118	Jefferson Medical College.—R	4	1	5	4	1	11	13			8		7	4	7	2	4		1		9	118
119	Medico-Chirurgical Coll. of Philadelphia.—R.†				1		6	8	1			1		2			1	1		2	2	119
120	Temple University, Medical Department.—R.	1					1	2			2		2	1	1					2	2	120
121	University of Pennsylvania, Dept. of Med.—R.	5		3	2		4	5		2	3		3	6	5			2	3	2	10	121
122	Woman's Medical College of Pennsylvania.—R.			1	2	1	2				1			1	1	2	2	1	3		2	122
123	University of Pittsburg, Med. Dept.—R.																					123
124	Medical College of the State of South Carolina									15	1											124
125	University of South Dakota, Coll. of Med.—R.														2							125
126	Knoxville Medical College, Knoxville.—R.	1								1	1					1	1				1	126
127	Tennessee Medical College, Knoxville—R.					1											9					127
128	Meharry Medical College, Nashville.—R.	20		17						2	37		4	3		3	5	10				128
129	Univ. of Nashville, Med. Dept., Nashville.—R.	26		9		1				7	2		4				11	28				129
130	University of Tennessee, Dept. of Med.—R.	12		2	1					2	1		3		1		8	7				130
131	Vanderbilt Univ., Med. Dept., Nashville.—R.	29		7	2					3	2	1	2	2			20	10				131
132	College of Phys. and Surg., Memphis.—R.	2		6		1			1				2					2				132
133	Memphis Hospital Medical College.—R.	16		53						3			2			1	3	93				133
134	University of West Tennessee, Med. Dept.—R.	3		3														2				134
135	Chattanooga Medical College, Chattanooga.—R	20			2					7	8		1	1							1	135
136	University of the South, Med. Dept.—R.	23		7					1	3	5						2	13		3	1	136
137	Fort Worth University, Med. Dept.—R.	1									1					1		1				137
138	University of Texas, Dept. of Med.—R.																					138
139	Baylor University, College of Medicine.—R.																					139
140	Southwestern Univ. Med. Coll., Dallas.—R.																					140
141	University of Utah, Dept. of Medicine.—R.											1										141
142	University of Vermont, College of Med.—R.†						8												13		19	142
143	Medical College of Virginia, Richmond.—R.									1								1				143
144	University College of Medicine, Richmond.—R.	1								1	2						1			1		144
145	University of Virginia, Dept. of Med.—R.	7		2				1	1	1	2					1		1		2	2	145
146	West Virginia University, Coll. of Med.—R.																		1			146
147	Marquette University, Medical Department.—R													1	1		1					147
148	Wisconsin College of Phys. and Surg.—R.														1							148
149	University of Wisconsin, Coll. of Med.—R.												1									149
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

* Figures for 1907-8. † Figures exact; distribution based on that for 1907-8.

(Continued from page 549)

years, each annual course to have been of not less than thirty teaching weeks' duration, and at least ten months shall intervene between the beginning of any course and the beginning of the preceding course. No time credit shall be given to holders of a Bachelor's degree, but subject credit may be given on satisfactory examination. Four years of residence in a medical college shall be required of all candidates for the degree of doctor of medicine.

The entire course of four years shall consist of at least 4,000 hours, divided into the subjects as shown in the opposite table, and no college shall be recognized that falls below this standard over 20 per cent. in any one branch or over 10 per cent. in the total. Laboratory or clinic hours may be substituted for didactic hours.

Each student shall be obliged to attend 80 per cent. of the exercises in every annual course of study for which he seeks credit. No student shall be given credit on examination unless he attains a grade of at least 70 per cent., or its equivalent, in any other marking system. And no student shall be graduated unless he shall have attained a passing grade in each and all subjects of the required curriculum.

A college which gives less than a four years' course of study, but does not graduate students, and is possessed of other required qualifications, may be admitted to membership.

Each medical college in membership in the Association shall print in every annual catalogue or announcement a table of the total number of hours work given in said college, arranged both by subjects and years.

The following colleges are members of the association: College of Physicians and Surgeons, Los Angeles, Cal.; Leland Stanford Junior University College of Medicine, Palo Alto and San Francisco, Cal.; University of California, Medical Department, Berkeley, Los Angeles, and San Francisco, Cal.; University of Colorado, School of Medicine, Boulder, Colo.; Denver and Gross College of Medicine, Denver, Colo.; George Washin
cine, Washington, D. C.;
Medicine, Washington, D. C.;
ment, Washington, D. C.; Ar
Battle Creek, Mich., and Chic
Surgeons, Chicago, Ill.; Indi
Bloomington and Indianapolis
Medicine, Des Moines, Iowa.; State University of Iowa, College of Medicine, Iowa City, Iowa; Kansas Medical College, Topeka, Kan.; University of Kansas School of Medicine, Lawrence, Kan.; University of Louisville, Medical Department, Louisville, Ky.; Baltimore Medical College, Baltimore, Md.; College of Physicians and Surgeons, Baltimore, Md.; Johns Hopkins University, Medical Department, Baltimore, Md.; University of Maryland School of Medicine, Baltimore, Md.; Woman's Medical College, Baltimore, Md.; Tufts College Medical School, Boston, Mass.; Detroit College of Medicine, Detroit, Mich.; University of Michigan, Department of Medicine and Surgery, Ann Arbor, Mich.; University of Mississippi Medical Department, Oxford, Miss.; University of Missouri Department of Medicine, Columbia, Mo.; University Medical College, Kansas City, Mo.; St. Louis University Medical Department, St. Louis, Mo.; Washington University Medical Department, St. Louis, Mo.; Washington University Medical Department, St. and Omaha, Neb.; University of Buffalo, Medical Department, Buffalo, N. Y.; University and Bellevue Hospital Medical College, New York, N. Y.; Cornell University Medical College, New York, N. Y.; University of North Carolina Medical Department, Chapel Hill, N. C.; Wake Forest College School of Medicine, Wake Forest, N. C.; University of North Dakota Medical Department, University, N. D.; Cleveland College of Physicians and Surgeons, Cleveland,

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Number.	21 Michigan 491	22 Minnesota 317	23 Mississippi 593	24 Missouri 813	25 Montana 31	26 Nebraska 316	27 New Hampshire..103	28 New Jersey....471	29 New Mexico....8	30 New York....2123	31 Nevada 8	32 North Carolina...514	33 North Dakota....77	34 Ohio 929	35 Oklahoma 186	36 Oregon 116	37 Pennsylvania ...2159	38 Rhode Island....99	39 South Carolina...332	40 South Dakota....87	41 Tennessee 537	42 Texas 751	43 Utah 75	44 Vermont 106	45 Virginia 182	46 Washington 89	47 West Virginia....271	48 Wisconsin 431	49 Wyoming 11	50 Hawaii, P.I.,P.R.8	51 Foreign 539	52 Totals 21,933	Number.
93							2	31		322								2														1	93
94	1							23		75							4					1		1							2	109	94
95										24																						24	95
96							1	69		332				2		1	3	3			1		1	1	1	2					8	415	96
97								2		136				1			2														5	149	97
98										172							9					1									2	185	98
99			1	1						2		41			1		3		12		1	5			19		1				8	125	99
100										4		101					3		3												1	113	100
101										2		81					1		6			1									2	94	101
102												48							3													53	102
103		3											15	1																	1	22	103
104	2													82			3				1										2	92	104
105	1							1		3				26			9															41	105
106	1								1	2				69			11			1							1	1				98	103
107				2		1		1		1				28			7					1				1	15					81	107
108							1			1				93			1						1								2	120	108
109	1													61													1					73	109
110														16																		16	110
111	1					1								216			4							1			1				1	231	111
112	1													33			1														1	38	112
113										1					44							4										51	113
114															10																	10	114
115					1											15										18					2	74	115
116					1											24										3						29	116
117		1		1				26		10				5			112											2			6	187	117
118	2	11	4	1	1	2	1	40		5		31	3	14		3	139	4	3	1	2	4	10	1	2	6	8	2			10	591	118
119	1	1						39	1	9			1	3			335	1					5			1		1			38	461	119
120								14		3		1	1	1			201	1	1				1								4	245	120
121	1	3	2	2			1	32		20		15		17			340	2	3		2	6	3	1	6	3	2	2		1	25	541	121
122	1	1		1				5		11		1		3		2	57	1	1		1	2			1	1					17	125	122
123										1	1			4			368										4					278	123
124								1				2							194													313	124
125						1											1			7												11	125
126		1	3											1	1				1		5	1	1		1	1					1	23	126
127												7									58				7	1	1					84	127
128			37	13								7		1	6		2		15		39	41			2		2				13	275	128
129			27	1						2		10		1	6				9		72	7			3		1				1	223	129
130			7					1				3			2				1		58	9			1							119	130
131	2		18	5						1					4				6		77	17				1						200	131
132			33	1										1	1						13	1										84	132
113			142	2										1	12	1			1		96	45			1							442	133
134			4									1									10	1									1	25	134
135	2		4							1		7			5		1				29	3			6		4					112	135
136			11							1		4			4		1		4		14	15			7		3				3	125	136
137															6						1	89										100	137
138																						210									1	211	138
139															2						1	49										53	139
140																						68										63	140
141																							17									18	141
142							24		1	20				1			1	3						73							3	166	142
143		1						1		2		17					1		6		3	1			160		12					206	143
144								2		1		33					1		2						80		4			2		140	144
145			4							1		4				1	2		3			1			49		3					88	145
146														2			4										33					40	146
147	8	1											2	1														151				163	147
148		5																										54				60	148
149		1			1									1						1								27				32	149
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	

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Ohio: Western Reserve Cleveland, Ohio; Starling-Ohio Medical State University of Oklahoma School of Meharry Medical College, Nashville, Ten Medical Department, Nashville, Tenn.: Richmond, Va.; University College of Medicine, Richmond, Va.; University of West Virginia Medical Department, Morgantown, W. Va.; Marquette University Medical Department, Milwaukee, Wis.; *University of Wisconsin* College of Medicine, Madison, Wis.

The secretary-treasurer of the Association is Dr. *Fred C.* Zapffe, 1764 Lexington street, Chicago.

SOUTHERN MEDICAL COLLEGE ASSOCIATION

The following requirements for admission to the freshman year are exacted by the colleges belonging to this Association:

The student must possess a diploma of graduation from some literary or scientific institution of learning, or a certificate that he has passed the entrance examination to a university, or a certificate from some legally constituted high school. The minimum preliminary education required by the Southern Medical College Association is a grammar school education and two years' successful attendance at a *recognized preparatory school* or a high school, or its equivalent, said equivalent to be determined by a superintendent of public instruction. A student may be given one month from date of his admission to submit his certificate of qualification. And if he fails to possess the requisite educational qualifications in one or more branches, he may matriculate and attend his first course of lectures, but must present the requisite certificate before matriculating in the second course, and all tickets or certificates in such cases must have the *conditions printed plainly on the face of each.* Beginning with the session of 1910-11 nothing less will be accepted than a diploma from an accredited high school as published in the catalogue of each state university, or its equivalent, such equivalent to be determined by the county or state superintendent of public instruction.

Colleges belonging to this Association are not to issue certificates of credit to any student who has not been in actual attendance on at least 80 per cent. of a seven months' medical course, nor to allow advanced standing on credentials representing less than that amount of work. No student is to be allowed to graduate unless he has been in actual attendance on at least 80 per cent. of a seven months' session immediately preceding said graduation.

The following colleges are members:

Medical College of Alabama, Mobile, Ala.; Birmingham Medical College, Birmingham, Ala.; Medical Department University of Arkansas, Little Rock, Ark.; College of Physicians and Surgeons, Little Rock, Ark.; Atlanta College of Physicians and Surgeons, Atlanta, Ga.; Medical College of Georgia, Augusta, Ga.; Medical Department, University of Mississippi, Oxford, Miss.; Medical Department, Epworth University, Oklahoma, Okla.; Medical Department, University of Tennessee, Nashville, Tenn.; Medical Department, University of Nashville, Nashville, Tenn.; Memphis Hospital Medical College, Memphis, Tenn.; Chattanooga Medical College, Chattanooga, Tenn.; Tennessee Medical College, Knoxville, Tenn.; Medical Department, Fort Worth University, Fort Worth, Texas; Medical Department, Baylor University, Dallas, Texas; Medical Department, Southwestern University, Dallas, Texas.

The secretary-treasurer is Dr. Lewis C. Morris, Birmingham, Ala.

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TABLE 3.—WHERE STUDENTS STUDY MEDICINE

A. STUDENTS FROM THE EASTERN STATES

Eastern States.	Year.	Attending Medical Schools in the East.		Middle States.		West.		South.		Totals.
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Connecticut	1908	264	96.7	6	2.2	0	0.	3	1.1	273
	1909	255	97.0	5	1.9	1	0.4	2	0.7	263
Delaware	1908	52	98.1	1	1.9	0	0.	0	0.	53
	1909	53	98.1	0	0.	1	1.9	0	0.	54
Dist. of Col.....	1908	117	96.0	2	1.6	1	0.8	2	1.6	122
	1909	109	92.4	4	3.4	0	0.	5	4.2	118
Maine	1908	172	94.5	6	3.3	2	1.1	2	1.1	182
	1909	165	94.8	5	2.9	3	1.7	1	0.6	174
Maryland	1908	236	95.5	6	2.4	1	0.5	4	1.6	247
	1909	302	97.1	4	1.3	0	0.	5	1.6	311
Massachusetts ..	1908	835	97.4	15	1.7	4	0.5	3	0.4	857
	1909	789	97.0	12	1.5	7	0.9	5	0.6	813
New Hampshire	1908	113	95.0	4	3.4	1	0.8	1	0.8	119
	1909	102	99.0	1	1.0	0	0.	0	0.	103
New Jersey	1908	426	94.2	18	4.0	2	0.5	6	1.3	452
	1909	438	97.1	10	2.2	1	0.3	2	0.4	451
New York	1908	1978	93.5	105	5.0	8	0.4	25	1.1	2116
	1909	1959	92.3	133	6.3	12	0.5	19	0.9	2123
Pennsylvania ...	1908	1920	91.3	155	7.4	4	0.2	25	1.1	2104
	1909	2005	92.9	130	6.0	11	0.5	13	0.6	2159
Rhode Island ...	1908	92	92.9	5	5.1	0	0.	2	2.0	99
	1909	94	94.9	3	3.1	2	2.0	0	0.	99
Vermont	1908	93	87.8	10	9.4	3	2.8	0	0.	106
	1909	95	89.6	7	6.6	4	3.8	0	0.	106
Virginia	1908	448	86.0	14	2.7	0	0.	59	11.3	521
	1909	410	85.1	17	3.5	3	0.6	52	10.8	482
West Virginia ..	1908	190	65.1	89	30.5	0	0.	13	4.4	292
	1909	168	62.0	89	32.8	0	0.	14	5.2	271
Totals	1908	6936	92.0	436	5.8	26	0.3	145	1.9	7543
	1909	6944	92.3	420	5.6	45	0.5	118	1.6	7527

B. STUDENTS FROM THE MIDDLE STATES

Middle States.	Year.	Attending Medical Schools in the East.		Middle States.		West.		South.		Totals.
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Illinois	1908	55	3.1	1651	94.4	14	0.8	29	1.7	1749
	1909	54	2.8	1832	95.4	14	0.8	20	1.0	1920
Indiana	1908	23	3.2	680	94.6	9	1.2	7	1.0	719
	1909	29	4.8	565	92.6	9	1.5	7	1.1	610
Iowa	1908	26	3.6	676	94.4	8	1.1	6	0.9	716
	1909	35	4.8	658	91.1	27	3.7	2	0.4	722
Kansas	1908	26	5.6	418	89.9	3	0.6	18	3.9	465
	1909	20	5.2	349	90.2	9	2.3	9	2.3	387
Kentucky	1908	33	5.2	541	85.2	0	0.	61	9.6	635
	1909	28	5.6	401	80.7	6	1.2	62	12.5	497
Michigan	1908	24	4.9	457	92.7	4	0.8	8	1.6	493
	1909	11	2.2	470	95.7	6	1.4	4	0.7	491
Minnesota	1908	21	5.7	350	94.3	0	0.	0	0.	371
	1909	25	7.2	313	90.2	7	2.0	2	0.6	347
Missouri	1908	26	2.8	851	92.6	9	1.0	33	3.6	919
	1909	27	3.4	743	91.4	12	1.3	31	3.9	813
Nebraska	1908	12	3.6	317	95.5	2	0.6	1	0.3	332
	1909	8	2.3	329	95.1	9	2.6	0	0.	346
North Dakota..	1908	6	7.9	70	92.1	0	0.	0	0.	76
	1909	8	10.4	68	88.3	1	1.3	0	0.	77
Ohio	1908	140	15.3	756	82.9	5	0.6	11	1.2	912
	1909	116	12.5	792	85.3	13	1.4	8	0.8	929
South Dakota..	1908	3	4.2	66	93.0	0	0.	2	2.8	71
	1909	1	1.1	86	98.9	0	0.	0	0.	87
Wisconsin	1908	22	4.6	450	94.2	2	0.4	4	0.8	478
	1909	18	4.2	407	94.7	5	1.1	0	0.	430
Totals	1908	417	5.3	7283	91.8	56	0.6	180	2.3	7936
	1909	380	5.0	7013	91.6	118	1.5	145	1.9	7656

C. STUDENTS FROM THE WESTERN STATES

Western States.	Year.	Attending Medical Schools in the East.		Middle States.		West.		South.		Totals.
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Arizona	1908	1	6.7	4	26.7	2	13.3	8	53.3	15
	1909	1	8.3	3	25.0	2	16.7	6	50.0	12
California	1908	55	13.5	39	9.6	306	75.0	8	1.9	408
	1909	52	18.4	33	11.7	192	68.1	5	1.8	282
Colorado	1908	9	5.8	28	17.9	117	75.0	2	1.3	156
	1909	10	6.7	21	14.0	116	77.3	3	2.0	150
Idaho	1908	2	8.3	17	70.9	5	20.8	0	0.	24
	1909	1	3.8	16	61.6	8	30.8	1	3.8	26
Montana	1908	8	18.6	32	74.4	1	2.3	2	4.7	43
	1909	6	19.4	21	67.7	4	12.9	0	0.	31
New Mexico	1908	2	18.2	3	27.3	2	18.2	4	36.3	11
	1909	3	37.5	4	50.0	1	12.5	0	0.	8
Nevada	1908	1	12.5	3	37.5	3	37.5	1	12.5	8
	1909	1	12.5	3	37.5	4	50.0	0	0.	8
Oregon	1908	22	16.8	15	11.5	92	70.2	2	1.5	131
	1909	19	16.4	19	16.4	77	66.3	1	0.9	116
Utah	1908	35	35.4	31	31.3	29	29.3	1	1.0	99
	1909	22	29.3	32	42.7	20	26.7	1	1.3	75
Washington	1908	26	25.2	47	45.7	26	25.2	4	3.9	103
	1909	29	32.6	36	40.4	21	23.6	3	3.4	89
Wyoming	1908	1	16.7	4	66.7	1	16.7	0	0.	6
	1909	3	21.4	5	35.7	5	35.7	1	7.2	14
Totals	1908	162	16.1	226	22.5	584	58.2	32	3.2	1004
	1909	147	18.1	193	23.8	450	55.5	21	2.6	811

D. STUDENTS FROM THE SOUTHERN STATES

Southern States.	Year.	Attending Medical Schools in the East.		Middle States.		West.		South.		Totals.
		Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	Students.	Percentage.	
Alabama	1908	36	5.3	24	3.5	0	0.	623	91.2	683
	1909	34	5.0	24	3.4	0	0.	629	91.6	687
Arkansas ...	1908	20	4.8	60	14.3	0	0.	339	80.9	419
	1909	20	5.2	47	12.2	0	0.	317	82.6	384
Florida	1908	19	14.4	9	6.8	0	0.	104	78.8	132
	1909	27	17.2	9	5.7	0	0.	121	77.1	157
Georgia	1908	51	7.8	17	2.6	1	0.1	586	89.5	655
	1909	50	7.6	15	2.2	1	0.2	593	90.0	659
Louisiana ...	1908	19	3.9	30	6.2	0	0.	438	89.9	487
	1909	20	4.4	31	6.8	1	0.2	404	88.6	456
Mississippi .	1908	16	2.7	39	6.5	1	0.4	547	90.4	603
	1909	18	3.0	40	6.7	1	0.2	534	90.1	593
No. Carolina	1908	158	31.5	13	2.5	2	0.4	329	65.6	502
	1909	170	33.1	11	2.1	1	0.2	332	64.6	514
Oklahoma ...	1908	8	5.3	41	27.0	1	0.7	102	67.0	152
	1909	8	4.3	55	29.6	0	0.	123	66.1	186
So. Carolina	1908	73	21.3	9	2.6	0	0.	261	76.1	343
	1909	66	16.8	12	3.0	1	0.3	314	79.9	393
Tennessee ..	1908	19	3.1	45	7.3	1	0.1	552	89.5	617
	1909	21	3.9	38	7.1	0	0.	478	89.0	537
Texas	1908	41	4.7	113	12.9	3	0.4	717	82.0	874
	1909	39	5.2	76	10.1	7	0.9	629	83.8	751
Totals	1908	460	8.4	400	7.3	9	0.1	4598	84.2	5467
	1909	473	8.9	358	6.7	12	0.3	4474	84.1	5317
Average	A	6940	92.1	428	5.7	36	0.4	131	1.8	7535
1908	B	398	5.1	7148	91.7	87	1.1	163	2.1	7796
and	C	155	17.1	209	23.0	517	56.9	27	3.0	908
1909	D	466	8.8	379	6.9	11	0.2	4536	84.1	5392
Migrating Students		1019	40.9	1016	40.8	134	5.4	321	12.9	2490

(Continued from page 553)

AMERICAN INSTITUTE OF HOMEOPATHY

The minimum requirements for entrance into the freshman class of all homeopathic medical colleges, as adopted in 1901, are, with abbreviation, as follows:

1. English Composition.—Exercise on assigned theme, not less than 200 words. Exercise in reading. Exercise in correction of ungrammatical sentences.

2. Mathematics.—Arithmetical exercises in (a) vulgar fractions, (b) decimals, (c) percentage, (d) proportion, (e) square and cube root, (f) weights and measures, (g) decimal system. Mensuration—(a) Definition of terms, (b) exercises under the more fundamental rules.

3. Geography.—General facts about North America.

4. History.—General, with particular reference to human progress in art, science and letters. (The examination to avoid exact dates and minor details.)

5. Latin Language.—(a) Grammar, (b) four books of Cæsar or its equivalent.

The colleges recognized as in good standing by this organization are:

Hahnemann Medical College of the Pacific, San Francisco, Cal.; Denver College of Physicians and Surgeons, Denver, Colo.; Hahne-

(Continued on page 555)

mann Medical College, Chicago.; Hering Medical College; Homeopathic Medical Department of the State [illegible] western Homeopath [illegible] School of Medicine [illegible] Michigan; Detroit [illegible] Medical College; New York Homeopathic Medical College; New York Medical College for Women; Cleveland Homeopathic Medical College; Pulte Medical College, Cincinnati; Hahnemann Medical College of Philadelphia.

The secretary is Dr. J. Richey Horner, 655 Rose Bldg., Cleveland, Ohio.

NATIONAL CONFEDERATION OF ECLECTIC MEDICAL COLLEGES

The following are the present minimum requirements for admission to colleges members of this Association:

1. A certificate of good moral character.
2. Diploma of graduation from (a) a four years graded high school, or (b) normal school, or (c) seminary, or (d) literary or scientific college, or (e) university, or (f) evidence of having passed the matriculation examination to a recognized literary or scientific college, or (g) a medical student's certificate secured by examination from a state medical board.

The following colleges are members of this Association:

American Medical College, St. Louis, Mo.; California Eclectic Medical College, Los Angeles, Cal.; Eclectic Medical College of the City of New York, New York, N. Y.; Eclectic Medical Institute, Cincinnati, Ohio; Georgia College of Eclectic Medicine and Surgery, Atlanta, Ga.; Lincoln Medical College, Lincoln, Neb.; Western Eclectic College of Medicine and Surgery, Kansas City, Kan.

The secretary-treasurer is John K. Scudder, M.D., 1009 Plum street, Cincinnati, Ohio.

COLLEGE NOTES

New Colleges.—Besides the two new colleges formed by mergers, one new college was organized at Atlanta, Georgia, the Hospital Medical College, Eclectic.

Colleges Discontinued.—Besides the six colleges which have lost their identity through mergers during the past year, four colleges have been suspended. These are the College of Homeopathic Medicine of the University of Minnesota, abolished by the Board of Regents, the Homeopathic Medical College of Missouri of St. Louis, the Nebraska College of Medicine of Lincoln, and the College of Physicians and Surgeons of Dallas, Texas. The Medical Department of the University of the South will be discontinued after Oct. 28, 1909.

Statistics of Canadian Colleges.—Statistics of the eight Canadian medical colleges are given in the last eight lines of Table I. There were 1,755 medical students, including 24 women students and 346 graduates, including 4 women. Seventy-six, or 22 per cent. of all graduates were reported also to hold degrees in arts or science. This percentage is doubtless somewhat low since complete reports were not obtained in this respect from the University of Toronto. All the Canadian schools give courses of five years, this standard now being required for license in some of the Canadian provinces.

Colleges Merged.—During the past year mergers have taken place in four instances. At Cincinnati, the Medical College of Ohio and the Miami Medical College, completed their union, forming the Ohio-Miami Medical College of the University of Cincinnati. At Nashville, the University of Nashville Medical Department and the University of Tennessee Department of Medicine have united, the new school to be known as the Universities of Nashville and Tennessee Medical Department. The Keokuk Medical College, College of Physicians and Surgeons, Keokuk, Iowa, was absorbed by Drake University College of Medicine of Des Moines. The University of Southern California College of Medicine of Los Angeles was taken over by the University of California and will be operated as the Los Angeles medical department.

Confusion of Titles.—At the last meeting of the Association of American Universities, an effort was made to bring about a uniformity in the use of the terms "department," "course," "college," and "school" in the titles of educational institutions so as to have a definite meaning for each. The committee which was appointed to take up the matter made the following recommendations:

1. That the term *department* be restricted to the various subjects taught in the university; as, for instance, the department of Latin, department of mathematics, department of physics, etc.

2. That the term *course* be restricted to the subdivisions of a subject; as, for instance, course in English.

3. That the term *college* be restricted to a part of the university the standard of admission to which is the equivalent of that required by the Carnegie Foundation for the Advancement of Teaching and which offers instruction leading to a first degree in arts, letters or sciences.

4. That the term *school* be restricted to a part of the university, the standard of admission to which is not less than the equivalent of two-years' work in the college and which offers instruction of not less than two-years' duration leading to a technical or professional degree.

Higher Preliminary Requirements.—Seventeen medical colleges already require two or more years of collegiate work for admission in addition to a four year high school education. These colleges and the years when such requirement began are as follows:

College	Began
Johns Hopkins University Medical Department	1893
Harvard Medical School	1900
Western Reserve University, Medical Department	1901
University of Chicago, Rush Medical College	1904
University of California, Medical Department	1905
University of Minnesota, Coll. of Med. and Surg	1907
University of North Dakota, College of Medicine	1907
[illegible] n, College of Medicine	1907
[illegible] ical College	1908
[illegible] School of Medicine	1908
[illegible] University, Department of Medicine	1909
[illegible]	1909
*Northwestern University Medical School	1909
*University of Kansas, School of Medicine	1909
University of Michigan, College of Medicine	1909
*University of Nebraska, College of Medicine	1909
University of South Dakota, College of Medicine	1909

*One year required for the session of 1908-9.

Eleven other colleges have definitely announced an increase in their entrance requirements to two years of collegiate work. These and the dates when such requirements will become effective are as follows:

College	Begins
University of Colorado, School of Medicine	1910
*Indiana University School of Medicine	1910
*State University of Iowa, College of Medicine	1910
Drake University, College of Medicine	1910
†University of Missouri, Department of Medicine	1910
John A. Creighton Medical College	1910
Dartmouth Medical School	1910
Columbia University, College of Physicians and Surgeons	1910
*Syracuse University, College of Medicine	1910
*University of Pennsylvania, Medical Department	1910
*University of Utah, Medical Department	1910

*One year required for the session of 1909-10.
†One year has been required since 1906.

The twenty-one following colleges either already require one year of work in a college of liberal arts in addition to a four-year high school course, or have announced their intention to do so on or before the year given:

College	In Force
[illegible] hool of Medicine	1908
[illegible] rolina, Medical Department	1909
[illegible] licine and Surgery	1910
[illegible] ge of Medicine	1910
[illegible] d Surgeons, Chicago	1910
[illegible] llege, Chicago	1910
[illegible]	1910
[illegible] ouisiana, Medical Department	1910
St. Louis University School of Medicine	1910
[illegible] Medical Department	1910
[illegible] ti, Medical Department	1910
[illegible] College	1910
[illegible] hysicians and Surgeons	1910
[illegible] School of Medicine	1910
University of Oregon, Medical Department	1910
Vanderbilt University, Medical Department	1910
University of Texas, Medical Department	1910
*University of Virginia, Department of Medicine	1910
West Virginia University, College of Medicine	1910
Marquette University Medical Department	1910
Wisconsin College of Physicians and Surgeons	1910

*Requires a three-year high school course plus one year of college work.

Several other colleges were previously listed as having adopted higher requirements. A few have since rescinded their action, six have merged into other colleges, and others, on inspection, being found unsatisfactory, were omitted from the lists. The schools above named, however, have made definite statements regarding the increase in their entrance requirements and doubtless mean what they say.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, AUGUST 14, 1909

MEDICAL EDUCATION IN THE UNITED STATES

STATISTICS FOR THE COLLEGE YEAR 1908-9

The tabulated statistics herewith presented (pages 546 to 554) are for the year ending June 30, 1909, and are based on signed reports received directly from the medical colleges, or from other reliable sources. We wish here to acknowledge the courtesy and cooperation of the officials of the medical colleges which have made the compilation of these complete statistics possible.

STATISTICS OF COLLEGES

On pages 546 to 549 is Table 1, which gives all the colleges in session during 1908-9, the population of the city in which each college is located, the number of students, men and women, registered during the year, the number of 1909 graduates, men and women, the number of graduates holding collegiate degrees, the number of teachers for each college, the number of weeks of actual work in the college year, the total fees for each year, the executive officer of the college and the dates of beginning and ending of the next session. The figures in heavy-faced type show the totals by states. Beginning on page 531 are given essential facts of all medical colleges, arranged by states, and on pages 549 to 555 the requirements and membership of the different college associations.

NUMBER OF MEDICAL STUDENTS

The total number of medical students (matriculants) in the United States for the year ending June 30, 1909, excluding special students, was 22,145, a decrease of 457 below 1908 and a decrease of 2,131 below 1907. It is the lowest number since THE JOURNAL began compiling these statistics in 1900. Of the total number of students, 20,554 were in attendance at the regular colleges, 899 at the homeopathic, 413 at the eclectic, 52 at the physiomedical, and 227 at the unclassifiable colleges. The attendance at the regular colleges shows a decrease of 382 below that of last year, of 1,649 below 1907 and of 2,562 below 1906. In the homeopathic colleges there was an increase of 9 over the attendance of 1908, but a decrease of 140 below the attendance of 1907. The eclectic colleges show a decrease of 66 since 1908, of 132 below 1907 and of 231 below 1906. The physiomedical colleges had 52 this year, as compared with 90 in 1908 and 97 in 1907.

TABLE 4.—MEDICAL COLLEGE ATTENDANCE

Year.	Regular.	Homeopathic.	Eclectic.	Physio Med..	Nondescript.	Total.
1880	9,776	1,220	830	....	....	11.826
1890	13,521	1,164	719	....	....	15,404
1900	22,710	1,909	522	....	....	25,171
1901	23,846	1,683	664	80	144	26.417
1902	24,878	1,617	765	91	150	27,501
1903	24,930	1,498	848	149	190	27,615
1904	24,662	1,309	1,014	123	234	28,142
1905	24,119	1,104	578	114	232	26,147
1906	23,116	1,085	644	110	249	25,204
1907	22,303	1,039	545	97	292	24,276
1908	20,936	891	479	90	206	22,602
1909	20,554	899	413	52	227	22,145

GRADUATES

The total number of graduates for the year ending June 30, 1909, was 4,442, a decrease of 299 below 1908, a decrease of 538 below 1907, and of 922 below 1906. The percentage of graduates to matriculants was 20.1, as compared with 21.0 in 1908 and 20.5 in 1907. The number of graduates from the regular colleges was 4,090, or 280 less than in 1908 and 501 less than in 1907. From the homeopathic colleges there were 209 graduates, or 6 less than in 1908 and 16 less than in 1907. The eclectic colleges graduated 84, or 32 less than last year and 37 less than in 1907. The physiomedical colleges had 15 graduates this year, as compared with 12 last year and 11 in 1907.

TABLE 5.—MEDICAL COLLEGE GRADUATES

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880	2,673	380	188	....	....	3,241
1890	3,853	380	221	....	....	4,454
1900	4,715	413	86	....	....	5,214
1901	4,879	387	148	18	12	5.444
1902	4,498	336	138	16	11	4,999
1903	5,088	420	149	24	17	5,698
1904	5,190	371	146	20	20	5,747
1905	5,126	276	153	22	23	5,600
1906	4,841	286	186	22	29	5,364
1907	4,591	225	121	11	32	4,980
1908	4,370	215	116	12	28	4,741
1909	4,090	209	84	15	44	4,442

Of the 4,442 medical graduates, 692, or 15.6 per cent., were reported to hold also degrees in arts or science, as compared with 820 (17.3 per cent.) in 1908, and 903 (18 per cent.) in 1907. It is expected that in future the percentage of college graduates will increase rather than decrease, since more medical schools are requiring some college work for admission.

WOMEN IN MEDICINE

During the past year there were 921 women studying medicine, an increase of 86 over 1908, but 7 less than in 1907. The percentage of all medical students was 4.2, as compared with 3.7 per cent. last year. There were 162 women graduates this year, or 3.7 per cent. of all graduates. In 1908 there were 835 women students and 185 graduates, while in 1907 there were 928 women students and 211 graduates. Of all the women matriculants, 169 (18.4 per cent.) were in attendance at the 3 medical colleges for women, as compared with 186 (22.3 per cent.) in 1908 and 210 (22.6 per cent.) in 1907. From the 3 women's colleges, there were 33, or 20.3 per cent., of all women graduates, as compared with 46 (24.9 per cent.) in 1908. The remaining 752 (81.6 per cent.) were matriculated in coeducational colleges.

TABLE 6.—Women in Medicine

Year.	Total women students.	Percent. of all students, both sexes.	Total women graduates.	Percent. of grads., both sexes.	Women's colleges.	Students.	Percent. of all women students.	Graduates.	Percent. of all women graduates.	Co-ed. schools.	Students.	Percent. of women students.	Graduates.	Percent. of all women graduates.
1904	1,129	4.3	244	4.0	3	183	16.2	56	23.0	97	946	83.8	198	77.0
1905	1,073	4.1	219	4.0	3	221	20.6	54	24.5	96	852	79.4	165	75.5
1906	895	3.5	233	4.3	3	189	21.0	33	14.1	90	706	79.0	200	85.9
1907	928	3.8	211	4.2	3	210	22.6	39	18.5	86	718	77.4	172	81.5
1908	835	3.7	185	3.9	3	186	22.3	46	24.9	88	649	77.7	139	75.1
1909	921	4.2	162	3.7	3	169	18.4	33	20.3	91	752	81.6	129	79.7

NUMBER OF COLLEGES

During the past year 11 colleges (mentioned on page 555) have either suspended or have merged into others and 3 new colleges were established, making a net decrease of 8 colleges since last year, the total now being 144. The regular colleges number 117, a decrease of 6 since last year. The homeopathic colleges number 14, a decrease of 2. Of the eclectic colleges, during the year, one changed to regular, but one new college was organized, leaving 8, the same number as last year. There are still 2 physiomedical colleges and 3 schools which are unclassifiable since they offer to teach two or more systems of medicine.

TABLE 7.—Medical Colleges

Year.	Regular.	Homeopathic.	Eclectic.	Physio-Med.	Nondescript.	Total.
1880	72	12	6	....	....	90
1890	93	14	9	....	....	116
1900	121	22	8	....	....	151
1901	124	21	10	2	2	159
1902	121	20	10	3	1	155
1903	121	19	10	3	1	154
1904	133	19	10	3	1	166
1905	129	18	9	3	1	160
1906	130	18	9	3	1	161
1907	131	17	8	3	2	161
1908	123	16	8	2	3	152
1909	117	14	8	2	3	144

The total number of colleges which have ceased to exist through mergers or otherwise since 1904 is 45. During the same time, however, 23 new colleges have been organized, leaving a net decrease of 22. While the total number of colleges is smaller, the percentage of higher-grade, stronger medical colleges has been considerably increased.

LENGTH OF TERMS

The length of term of each college fluctuates somewhat from year to year, but on the whole during the last six years there has been a decided lengthening of college terms. This has reference to the weeks of actual work, exclusive of holidays. Four colleges this year report sessions shorter than twenty-seven weeks, as compared with 2 last year and 6 in 1907. In 1901 there were 58 which held sessions of less than twenty-seven weeks. Of those having sessions of twenty-seven or twenty-eight weeks, the number is 17 this year, or 4 less than last year and 29 less than in 1903. There are 23 colleges claiming courses of twenty-nine or thirty weeks of actual work and 51 claiming courses of thirty-one or thirty-two weeks. The 3 colleges claiming courses longer than thirty-six weeks are night schools. It would doubtless require twelve or fourteen years of the usual night-school study, however, to secure the equivalent of four years of thirty weeks each in the better day colleges. Ninety-nine, or 68 per cent. of all colleges, require from thirty-one to thirty-six weeks, as compared with 64 per cent. last year.

TABLE 8.—College Terms

Year.	23 to 26 weeks.		27 to 28 weeks.		29 to 30 weeks		31 to 32 weeks.		33 to 34 weeks.		35 to 36 weeks.		Ov. 36 weeks	
	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.	Number.	Per Cent.
1901	58	36.5	42	26.4	8	5.0	26	16.4	4	2.5	18	11.3	3	1.9
1902	44	28.4	44	28.4	11	7.1	33	21.3	3	1.9	18	11.6	2	1.3
1903	33	21.4	46	29.9	15	9.7	37	24.0	2	1.3	19	12.4	2	1.3
1904	27	16.3	44	26.5	22	13.3	37	22.3	13	7.8	20	12.0	3	1.8
1905	15	9.4	35	21.8	12	7.5	44	27.5	13	8.1	38	23.8	3	1.9
1906	14	8.7	35	21.7	26	16.1	32	19.9	24	14.9	28	17.4	2	1.3
1907	6	3.7	27	16.8	26	16.1	42	26.1	29	18.0	29	18.0	2	1.3
1908	2	1.3	21	13.8	28	18.4	51	33.6	24	15.8	22	14.5	4	2.6
1909	4	2.3	17	11.6	23	16.4	51	34.9	18	12.3	30	20.5		2.0

TUITION AND OTHER FEES

Special attention is called this year in Table 1 to the total amount charged by the various colleges for tuition, matriculation, laboratory and graduation fees *per annum* for each student. For the 139 colleges from which complete information was received regarding fees, various amounts are changed as follows:

Total Fees.	Colleges.
$ 50 or less..............................	7
50 to $ 75..............................	11
75 to 100..............................	37
100 to 125..............................	36
125 to 150..............................	19
150 to 175..............................	17
175 to 200..............................	7
200 or above..............................	5

Only 18 charge fees less than $75 *per annum*, among these appearing the state universities of Colorado, Iowa, Missouri, North and South Dakota, Oklahoma and Wisconsin, where there is charge only for matriculation and laboratory fees, no tuition being required. The others are schools for colored students. The highest number, 37, is of the colleges charging from $75 to $100, and there are 36 which charge from $100 to $125, making 73 colleges charging fees ranging from $75 to $125 per year. There are 36 colleges having fees of $125 to $175 per year and 12 having fees of $175 or above. The 5 colleges having the highest fees are Johns Hopkins University Medical Department, Harvard Medical School, University and Bellevue Hospital Medical College, Columbia University College of Physicians and Surgeons and the Medical Department of the University of Pennsylvania. The highest fees, ranging from $250 to $275, are charged by Columbia University College of Physicians and Surgeons.

From a knowledge based on an actual inspection of all medical schools, it can be stated that among those colleges charging low fees are to be found a fair number of medical colleges of high grade, while, on the other hand, some colleges of low rank charge high fees. From the monetary standpoint, therefore, there is no reason why a student of limited means should attend a low-grade medical college. The figures here given are particularly interesting in the light of the facts already made known[1] that, in the twenty-five leading medical colleges, to teach each student in the freshman and sophomore years costs the colleges from $250 to $700 or even more each year.

DISTRIBUTION OF MEDICAL STUDENTS

Table 2 on pages 550 to 554 shows from what states the students come who were in attendance at each medical college during the session of 1908-9. The influence of the proximity of the medical school is seen in the fact that states having medical colleges contribute more students in proportion to the population than those which have no colleges. A comparison of this table with the large tables based on state board examinations[2] which show the distribution of the alumni of each college, is interesting. The college whose alumni are widely distributed usually has a student body from an equally large number of states.

Only two states contributed over 2,000 students each this year, these being Pennsylvania with 2,159 and New York with 2,123. Illinois contributed 1,920. The next states in the order of the number of students contributed are Ohio, 929; Massachusetts and Missouri, each, 813; Texas, 751, and Iowa, 722. Four states have less than 20 each, these being Wyoming, 14; Arizona, 12; Nevada, 8, and New Mexico, 8. There were 83 students from Hawaii, Porto Rico and the Philippine Islands and 539 students from foreign countries.

MIGRATION OF MEDICAL STUDENTS

Table 3 has been prepared to show the number of students of each section of the country which attend medical schools of that section and the number which attend medical colleges of other sections. Section A gives the figures for students from the eastern states; Section B, for students from the middle states; Section C, for students from the western states, and Section D, for students from the southern states. Figures are given for the two college years, 1907-8 and 1908-9. The differences in the figures for the two years show the fluctuation due to the exit of the graduating class, to the ingress of the new freshmen and to the comparatively few which during the year left the colleges of one section and went to colleges of another section. At the bottom of Section D the average totals for the two years are given. Percentages are given in order to permit of comparisons. The eastern section has long held the largest place in medical education and, as would be expected, still has the smallest percentage of students leaving to attend colleges of other sections, the percentage of those remaining in the eastern section being 92.1. The middle states are a close second, with 91.7 per cent. of their own resident students studying medicine in that section. The western section, having the smallest number of colleges, naturally has a larger proportion of students attending colleges in other sections. Of the students who migrate from the middle and southern sections, the largest proportions go east, while of those from the western section the largest proportion attends colleges of the middle section. Altogether 2,490 students attended colleges outside of the section in which they lived. Of this number, 1,019, or 40.9 per cent., went to the eastern section; 1,016, or 40.8 per cent., went to the middle section; 321, or 12.5 per cent., went to the southern section, and 134, or 5.4 per cent., went to the western section.

PRESENT STATUS IN MEDICAL EDUCATION

Attention should be drawn to the demoralizing influence of medical sects, particularly osteopathy, which have secured special legislation in a number of states. This is more fully discussed in another column.[3] A careful study of the entire field of medical education, however, shows that marked progress has been made, due chiefly to the action of the medical faculties themselves, which, recognizing the need of higher and better enforced standards, have made great sacrifices and gone to much expense to bring about the desired end. As is noted in another column,[4] there are 24 colleges which after this fall will be requiring one or more years of collegiate work for admission. Numerous mergers have been brought about, better equipped laboratories have been provided, better trained teachers have been employed and increased endowments secured. There is, indeed, a bright outlook for the future of medical education.

THE SCIENCE OF CLINICAL MEDICINE

The development of medicine during the past twenty-five years has resulted in the separation of anatomy, pathologic anatomy, physiology, physiologic chemistry and pharmacology as distinct branches of medicine, which formerly constituted a unit. Each of these subjects is now generally recognized as a pure science and has its quota of able men devoting their best energies to the further advancement of that science.

In this issue of The Journal, Dr. S. J. Meltzer calls attention to the growing demand for the separation of another branch from the mother-stem—the division of the science of clinical medicine from the practice of medicine. Such separation seems necessary, since the two divisions of medicine are necessarily incompatible. Clinical research desires to delve into the unknown to seek for new truths, while practice cares chiefly for things of already proved value in diagnosis or treatment. As Dr. Meltzer points out, for the scientific side of clinical medicine utility only obscures vision and retards progress, while in the practice of medicine utility is of chief consideration. Furthermore, the research side needs scientific men whose time is devoted to the following up of details now seemingly unimportant, and sufficient time is not available for those engaged in active practice.

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[1] The Journal, June 19, 1909, page 2046.
[2] The Journal, May 22, 1909, pages 1698 to 1713.
[3] This issue, page 582.
[4] This issue, page 555.

The responsibility for this work cannot well be left with the anatomist, the physiologist or the pathologist, who with few exceptions have little conception of the clinical problem, for as a rule they are not clinically trained. The longer they work at their special branches and the older they become, the wider as a rule becomes the gap between the hospital wards and their laboratories. The development of the scientific side of clinical medicine, therefore, would tend to lessen the breach between the so-called scientific and so-called practical sides of medicine, and, as Dr. Christian points out,[1] will insure that "the physician of the future is both scientifically and practically trained in laboratory methods, but none the less a keen observer of his patients and so an able clinician in the truest sense."

The proposed separation would be clearly beneficial for both divisions of medicine. The development of the scientific side of clinical medicine would attract men of marked ability whose work would doubtless soon bring out new methods of diagnosis and treatment, thereby adding to the resources of the practitioner. While much has already been done through research in physiology, physiologic chemistry and pharmacology, how much more can be done if able men, trained in scientific methods, devote their lives to the further development of clinical methods! If it is to hold its place in the present rapid progress being made in the sciences of medicine, it is apparent that the scientific side of clinical medicine should be separated from active practice.

THE INFLUENCE OF THE CARNEGIE FOUNDATION ON MEDICAL EDUCATION

Science and higher education in this country have been placed under lasting obligation to Mr. Andrew Carnegie by his endowment of the two great institutions that bear his name—the Carnegie Institution of Washington and the Carnegie Foundation for the Advancement of Teaching. The first is devoted wholly, or practically so, to active investigation in other fields than the purely medical, the founder and his advisers believing that the needs of medical investigation would be well cared for in other ways. The Carnegie Institution, however, supports the *Index Medicus* and thus renders a most important and direct service to medicine of greater influence than is perhaps sufficiently appreciated by many in and out of the medical profession. If that unique publication, which is the only index of the current medical literature of the world that we have, were allowed to go under it would be a most lamentable loss to medicine. The number of periodicals now is so large that without such index it would be utterly impossible for our writers and investigators to keep adequately in touch with the additions constantly made to medical knowledge in all civilized countries. It is hoped that the trustees of the Carnegie Institution may have become so impressed with the great usefulness of the *Index Medicus* in promoting the growth of medical knowledge that no doubt will arise as to the wisdom of its continuance.

The Carnegie Foundation for the Advancement of Teaching, the influence of which on medical education it seems desirable to emphasize at this time, was established in order to provide retiring allowances and pensions for teachers in colleges and universities in this country and Canada. Of course, this does not mean every institution that calls itself college or university. In addition to fulfilling certain more or less obvious requirements, an institution in order to be acceptable must be non-sectarian. At first state universities also were excluded, but a little more than a year ago the endowment was increased by $5,000,000 in order that the benefits of the fund might be extended to state universities. A large proportion of the universities that participate in this pension system maintain medical departments, and members of their medical faculties that follow medical teaching as a career are as fully entitled, and as freely admitted, to pensions as members of other faculties. Already not a few medical teachers have retired on Carnegie allowances. The Carnegie Foundation consequently stands for the advancement of medical teaching to quite the same degree as it stands for the advancement of teaching in other branches.

This provision for pensions for medical teachers will help medical education because the career as medical teacher thereby naturally becomes more attractive to the right sort of men. Relieved in a measure from financial responsibility in case of disability from sickness and old age, the medical scholar will feel himself freer to devote himself unreservedly to his teaching and investigation than otherwise would be the case. As yet only a relatively small part of the total number of our medical schools derive direct benefit from this pension fund, and this number unfortunately can not be expected to be increased speedily by reason of the self-evident limitations of so many of our schools, every one of which we all know should be acceptable to the foundation so far as the character of the work done is concerned. Our efforts to raise the standards must not cease until such is the case.

But the Carnegie Foundation is a factor of great importance to medical education for other reasons, as well. It is evident that the work of the institutions that are admitted to the benefits of a pension system of this kind must be kept up to a reasonable standard. The officers and experts of the foundation must assure themselves that such is the case. By virtue of this fact the foundation not only feels, as it were, a special and direct interest in the work of a number of our medical schools, but must concern itself with the broad subject of medical education in general. as well. We have abundant evidence that this interest is actual.

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[1] Columbia University Quarterly, June, 1909, page 341.

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At the University of Wisconsin, for instance, classes in the departments of sociology and economics visit Milwaukee to study the disease from their respective viewpoints, and in many colleges investigative work with reference to such problems as the proportion of deaths from tuberculosis, economic losses, recurrence of the disease in infected houses, local conditions and surroundings, etc., is carried on with satisfactory results. Of the higher institutions of learning about one-fifth are engaged in such work of investigation. In addition to this at least 15 colleges and universities in this country offer extension lectures on tuberculosis, and in Wisconsin special lectures on this subject have been given for some years at farmers' institutes and before teachers' meetings in the state.

Another phase of the question concerns the study of tuberculosis among students and the transmission of the disease in the class-room and rooming houses. In some colleges practical illustrations of disinfection of rooms are given and immediate attention is paid to incipient cases of tuberculosis. Rules have been passed, in some instances, which prohibit students living in houses inhabited by tuberculous families, and committees on hygiene are active in obtaining information which can be used for the protection of students and in controlling the disease.

The influence of an army of young minds interested in this question, leaving our higher institutions and destined to become leaders in all phases of life, must sooner or later be of the greatest moment. Such persons, becoming business men and employers, will surely give more attention to the laws of hygiene and sanitation in work shops, factories, business houses, etc. Or, becoming our legislators, they will respect attempts of the medical profession to place on our statute books laws protecting the health of the people, preventing contagion and establishing state sanatoria, hospitals, etc. Or, becoming teachers in our public or private schools, they will influence the hundreds of thousands of boys and girls in a manner which can only be for the enlightenment of the masses of people regarding questions of hygiene.

While much has already been done along the lines indicated above, still more than one-half of the educational institutions of the country have not yet interested themselves in this problem. There is, therefore, much room for improvement, and undoubtedly, as Norton states, those who have not yet become actively engaged in this work are alive to its importance and soon will cooperate and lend a hand.

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Over and over again in recent years attention has been called to the fact that it is the medical school that sets the worst possible example with regard to the hygiene of education. The average medical student loses more weight and takes his final examinations much more to heart than do students in any other department. We should of course be setting an example in this matter in quite another way. There are many who will say that it is only by long hours of classwork that the medical student can be made to learn all that he has to know for examinations. This is unfortunate if true, for on his capacity to study after he has graduated depends his future career. Commencement is literally the beginning of medical education for a physician. It is what he will learn in the next ten years that counts. How well has he been taught to study for himself, to observe for himself, to think for himself? This ability means most for his future. Is it not possible that we are trying to convey too much information and not furnishing real education; that we are not developing the intellectual powers of the student? It would be worth while to have the problem placed squarely before us at the beginning of the new year.

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South was, indeed, much more important than any other part of the country for the originality of its medical science, and we owe to it anesthesia, the first gynecologic operations, the manufacture of artificial ice and other important inventions and discoveries. In the early part of the nineteenth century we had more fellows of the Royal Society in this country than we have at the present time, and most of them were from the South. They were men who had made brilliant studies in Europe and who then settled down into what might seem to us a narrow environment and did fine original work of high character, though we are only just beginning to appreciate all the significance of it. As to how much was accomplished in the West, Dr. Juettner's book[1] on "Daniel Drake and His Followers" furnishes abundant evidence and at the same time makes very clear how interesting is the story of American medicine when properly told.

It is perfectly possible for us to miss important records for the history of medicine if we neglect the compilation of documents at the present time. We called attention editorially in The Journal some time ago[2] to the fact that even for so important a phase of medical and surgical history as anesthesia we can learn some facts from non-medical writers that are unobtainable from those who wrote deliberately about medicine. We have been accustomed to think that surgical anesthesia was a new thing in the world, though many of the well-known poets and literary men during the three centuries after the fourteenth draw figures from "the mercies of old surgeons who put their patients to sleep before they cut them." Even for so important a disease as tuberculosis the informal gleanings of medical history to be found in non-medical writers are almost more informing and are more interesting than medical history; the same thing is true regarding leprosy.

We welcome, then, the formation of the "Western Association for the Preservation of Medical Records" which has recently been organized[3] in the middle West. The fact that prominent members of the profession who practice medicine in various phases besides the regular school are connected with it as vice-presidents will surely bring about the preservation of the records of sectarian medicine—a consummation eminently to be wished—for this will be extremely interesting after another generation, when medical differences shall have passed away. It must not be forgotten that every phase of medical history will be of interest. Librarians used to bind magazines without their advertising pages. Now we know that the advertising pages of a magazine of any kind often contain more valuable historical matter than the body of the magazine. Precious documents relating to the practice of medicine in our time are to be found even in the flying leaflets issued for advertising purposes. We know a man who, with the historical instinct, faithfully preserved every document of any kind relating to medicine that came to him in the course of twenty years. No matter how trivial it might seem, it was put away in a large room with the others. When at the end of the time he presented his collection to the College of Physicians in Philadelphia it was unique of its kind and contained material of the greatest value for the future historian of medicine in America.

We commend heartily the effort to seek out and preserve all documents that may have a bearing on medical history. We now have enough medical libraries in this country whose controlling boards are quite willing, even anxious, to guarantee the preservation of such material, therefore there need be no excuses on account of the bother or the space required for such things or any reasonable objection to their preservation. Let us hope that similar associations like that we have mentioned will be formed and that everywhere throughout the country some men at least will take on themselves the duty, for it is a precious duty to the American profession of the future, of encouraging an interest in medical history and doing everything they can to preserve the records of it.

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[1] Reviewed in The Journal, June 5, 1909, lii, 1854.

[2] March 22, 1907, lii, 1041.

[3] Dr. Charles A. L. Reed, Cincinnati, president; Dr. Otto Juettner, 628 Elm street, Cincinnati, secretary; Dr. A. G. Drury, 704 West Eighth street, Cincinnati, librarian.

Medical News

ALABAMA

Medical College Increases Capital Stock.—Notice has been filed with the secretary of state that the capital stock of the Birmingham Medical College has been increased from $15,000 to $75,000.

First-Aid Corps to Be Organized.—The Tennessee Company has decided to organize a first-aid corps at six of its mining camps, and if the experiment succeeds, a detachment will be maintained at each of the mining camps of the company. The work is in charge of Dr. Matthew J. Shields.

Antituberculosis League Meeting.—At the annual election of officers of the Montgomery Antituberculosis League, Dr. Frank H. McConnico was elected a vice-president, Dr. Gaston J. Greil, chairman of the executive committee, and Drs. Forney C. Stevenson and Glenn Andrews members of the committee. During the past year the league has established two dispensaries and distributed about 25,000 leaflets and 8,000 booklets setting forth the local health conditions. During the year, 30 cases of tuberculosis were cared for by the league, only 6 of which were in white people.

Personal.—Dr. Frank P. Petty, New Decatur, has been elected health officer of Morgan County, vice Dr. Scott L. Rountree, deceased.——Dr. Miles P. Hughes, Gadsden, has been appointed a member of the board of pension examining surgeons for Etowah county, vice Dr. John C. Slack, resigned.——Dr. Peter Binford, Somerville, suffered a second cerebral hemorrhage recently and is said to be in a precarious condition.——Dr. William D. Fonville, Ensley, has been elected health officer of Birmingham.——Dr. William G. Somerville and family, Tuscaloosa, have sailed for Europe.

ARKANSAS

Sanitarium Incorporates.—Park Springs Sanitarium has been incorporated at Bentonville with a capital stock of $50,000.

Eclectic Medical Board Election.—The Arkansas State Eclectic Medical Board elected the following officers July 14: president, Dr. Claud E. Laws, Fort Smith; secretary, Dr. Andrew J. Widener, Little Rock; and treasurer, Dr. Pearl H. Tatman, Eureka Springs.

CALIFORNIA

Medical Society Incorporates.—The San Joaquin Medical Society has filed a petition for incorporation. The object of the action is declared to be the prevention of illegal, improper and unlicensed medical practice.

Must Not Distribute Questionable Medical Advertisements.—The police committee of the board of supervisors of San Francisco county have approved an ordinance prohibiting the distribution of advertisements of medical concerns of questionable standing.

Camp of Instruction at the Presidio.—A military camp of instruction for medical officers of the militia opened at Presidio July 15, with Major Albert E. Truby, medical corps, U. S. A., in command. Each state of the Pacific Coast has sent representatives from the medical department of its national guard, in all 25, to take the course.

Tuberculosis in California.—Tuberculosis is a cause of more deaths in cities than in the rural districts in California. Of the deaths recorded 15 per cent. of those in cities in 1908 were from tuberculosis, while 14.1 per cent. of all deaths were from this cause in the remainder of the state. Eight cities show a percentage above the average of 15 and 11 cities have a lower average.

New Hospitals.—The plans for St. Francis Hospital, San Francisco, have been completed, and estimates are now being taken. The building will probably cost about $200,000. Dr. John Gallwey is president, Dr. Walter B. Coffey vice-president, and Dr. John O'Connor secretary of the institution.——A new clinical building is being erected as rapidly as possible by the San Francisco Association for the Study and Prevention of Tuberculosis. It is expected it will be ready to open October 1.——The Southern Pacific Railway Company formally opened its hospital at Baker and Fell streets, San Francisco, July 15. The building and its equipment have cost nearly a million dollars.——The first hydrotherapeutic institution to establish in the west will soon be opened at the Stockton State Hospital.

Personal.—Dr. Weston O. Smith, Alameda, was thrown from a mule on a trail in the Yosemite Valley recently, breaking his left arm near the wrist.——Dr. William H. Davies, Monterey, has lost the sight of his right eye from cataract.——Dr. Mark F. Hopkins has been appointed member of the San Jose Board of Health.——Dr. Rudolph W. Baum has been elected a member of the staff of the German Hospital, San Francisco, vice Dr. Emil O. Jellinek.——Dr. Fred H. Bangs, San Jose, has been elected vice-president of the board of managers of the Agnew State Hospital for the Insane.——Dr. D. C. Strong, San Bernardino, has been re-elected physician and health officer of San Bernardino county, and superintendent of the county hospital.——Dr. C. S. Marvin has resigned as assistant superintendent of the Agnew State Hospital to accept a similar position in the Ukiah State Hospital.——Dr. Gustave Wilson, assistant superintendent of the Southern California State Hospital for the Insane, Patton, has resigned.

COLORADO

Farewell to Physician.—A farewell banquet was tendered to Dr. Sol G. Kahn, Leadville, by his brother physicians of the Lake County Medical Society, on the occasion of Dr. Kahn's departure for Salt Lake City.

Must Stop Practice.—An injunction is said to have been served on Dr. Alfred Freudenthal, Trinidad, restraining him from the practice of medicine during the life of a contract entered into by himself and Dr. John R. Espey, which expires in October, 1911.

Society Meeting.—The Powers County Medical Association held its annual meeting in Lamar July 20. The following officers were elected: president, Dr. Elmer E. Bartelt; secretary and treasurer, Dr. Jirah H. Kellogg, and censors, Drs. William A. Packard and the president.

Personal.—Dr. Samuel D. Hopkins, Denver, is taking a trip to the Orient.——Dr. Thomas E. Carmòdy, Denver, has been appointed surgeon-general of the National Guard of Colorado.——Dr. George H. Stöver, Denver, is reported suffering from *x*-ray cancer and his hands have been operated on recently.——Dr. Francis B. Rothrock, Colorado Springs, has returned from a trip around the world.

The Work of the Tuberculosis Home.—"The Oakes Home," an institution for the tubercular in Denver, now occupies a group of six buildings and has a capacity of 150 patients, and in the fourteen years of its existence has received 8,700 patients. Patients are received in all stages of the disease and at varying charges. Last year a workshop was opened where more than 50 patients have been employed at book binding, china painting, weaving, basketry and metal work. The products are sold at the workshop which is now-self-supporting. The funds were obtained by Rev. Frederick Oakes and the property has been deeded by him to the Episcopal diocese to be used in the care of tuberculous sufferers.

CONNECTICUT

Reception to Scotch Obstetrician.—Sir Alexander Russell Simpson, professor of midwifery in the University of Edinburgh, was the guest of honor at a reception at the Hunt Memorial Building, Hartford, June 28.

Commencement at Yale.—At the annual commencement exercises of Yale University Medical Department, New Haven, Dr. William H. Howell, dean of Johns Hopkins Medical School, Baltimore, delivered the doctorate address on "Medicine."

Personal.—Dr. Frank N. Freeman, traveling fellow in philosophy and psychology of Yale University, has been appointed instructor in educational psychology in the University of Chicago.——Dr. Oliver T. Osborne, New Haven, has gone to Europe.

Vasectomy in Connecticut.—The House of Representatives at Hartford passed a bill July 20, establishing in Connecticut the principle of providing against the increase of defectives by performing the operation of vasectomy on criminals and inmates of state institutions for defectives in cases wherein the physicians deem it wise that the breeding of other defectives be not permitted.

DISTRICT OF COLUMBIA

Hospital Officials to Meet.—The eleventh annual conference of the American Hospital Association will be held at Washington, D. C., September 21-24.

Commencement Exercises.—At the annual commencement exercises of the Georgetown University Medical School, held in Washington, a class of 15 was graduated. President Joseph F. Himmell of the university conferred the degrees and the address to the graduates was made by Dr. D. Percy Hickling.——The item in The Journal, June 5, relative to the change in the deanship of the Georgetown University was an error, as the change in deanship occurred in the George Washington University.

Personal.—Dr. Reid Hunt has gone to Europe.——Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, has had conferred on him the Cross of the Legion of Honor by the president of France.——Dr. J. Steele Forsythe has been appointed physician in charge of a hospital of a Brazil railway company.——Dr. G. Lloyd Magruder, Washington, has returned from Europe.——Dr. John S. Fulton has been appointed executive secretary of the International Congress on Hygiene.——Dr. Francis Wilson has succeeded Dr. Joseph S. Wall as a member of the board of fire and police surgeons of Washington.——Dr. Thomas A. Lee has succeeded Dr. H. W. Moffitt, resigned, as superintendent of the Casualty Hospital, Washington.

ILLINOIS

Chicago

Personal.—Dr. Alfred D. Kohn has returned from Europe.——Dr. Joseph P. Smyth has been re-elected high medical examiner of the Catholic Order of Foresters.——Dr. and Mrs. William N. Senn, Dr. and Mrs. George E. Baxter, Dr. and Mrs. George F. Fiske, Dr. Corey H. McKenna, and Dr. and Mrs. Arthur R. Elliott have sailed for Europe.

Out-Door School for Tuberculous Children.—On August 3, the first out-door school for tuberculous children was opened on the grounds of the Harvard School, West Seventy-fifth street and Vincennes road, under the joint management of the Board of Education and the Chicago Tuberculosis Institute. The school at first will have thirty pupils, selected from children attending the public schools who are found physically subnormal, or predisposed to tuberculosis.

Addresses of Chicago Physicians Wanted.—Physicians in Chicago who have not already done so are asked to send to the American Medical Association their new street numbers—for two purposes: that The Journal may be correctly sent and that their addresses may appear correctly in the American Medical Directory which is now being printed. A blank was given on advertising page 40 of The Journal, August 7, and the matter was discussed editorially on page 463 of that issue.

Hospital News.—The board of directors of the Norwegian Lutheran Deaconess' Home, at a meeting, July 13, completed the arrangements for the new $75,000 hospital to be built adjoining the old home at Haddon avenue and Leavitt street.——A donation of $5,000 has been made by the Illinois Steel Company to the South Chicago Hospital, to be applied toward the payment of the indebtedness.——The Gil W. Barnard Hospital Association, organized and incorporated by prominent Masons of this city, is endeavoring to raise $200,000 for the establishment of a hospital.——Construction work has been begun on the new addition to Wesley Hospital which is to cost $125,000, and to accommodate about 180 additional patients. The new wing will be ready for occupancy in February next.——By the will of the late Augusta Mannheimer, widow of Dr. M. Mannheimer, $10,000 is bequeathed to the United Hebrew Charities for the benefit of the Michael Reese Hospital, with the suggestion that a contagious ward for children be maintained; $2,500 is bequeathed to the Alexian Brothers Hospital, and all Dr. Mannheimer's medical books are given to Rush Medical College, together with a bequest of $5,000 for the establishment of a library to be named after the testator's husband.

INDIANA

Refused License.—At a meeting of the State Board of Medical Examination and Registration, July 15, it was agreed by a unanimous vote not to reinstate Dr. Charles L. Landfair, Bluffton, whose license was revoked after the investigation of charges of criminal practice.

Personal.—Dr. Lewis N. Geisinger, Auburn, has been appointed secretary of the DeKalb County Board of Health, vice Dr. Jacob D. Casebeer, deceased.——Dr. Walter Baker, South Bend, has been selected to take charge of the Anti-Tuberculosis Society's fresh-air colony at Pottawattomie Park.——Dr. Minnietta Hervey, physician for the Home for the Friendless, Richmond, has resigned.——Dr. Erastus S. Fisher, Markle, is said to have been declared insane July 8.

IOWA

Physician Pardoned.—Dr. J. W. Crawford, Lamoni, convicted of the murder of Miss Maud Stone 4 years ago by a criminal operation and sentenced to imprisonment for twelve years in the state penitentiary, has been pardoned by the board of control because of evidence presented that the deceased was already suffering from the effects of a criminal operation when she consulted Dr. Crawford.

Personal.—Dr. Albert C. Moerke, Burlington, has been elected president of the State Board of Medical Examiners, vice Dr. Alfred P. Hanchett, Council Bluffs.——Dr. W. J. Neuzil has resigned as assistant surgeon of the Soldiers' Home, Marshalltown, and Dr. H. A. Newell has been appointed his successor.——Dr. William J. Heflin, Nora Springs, suffered a severe scalp wound in a collision between his automobile and a telephone pole July 24.——Dr. Edgar B. Henderson, Marengo, dislocated his knee by a fall, July 10.——Dr. Dill N. Pattison, Oelwein, has resigned as local surgeon of the Chicago Great Western Railway.——Dr. Charles S. Grant, Iowa City, has been detailed as surgeon of the Fifty-fourth Infantry, I. N. G., during its encampment this month.

KANSAS

College Wants Medical Department.—Midland College, Atchison, it is announced, will open a medical department by affiliating with Ensworth Medical College of St. Joseph, Mo.

Large Proportion of Convicts Tubercular.—The State Board of Health has just completed its tests among the 812 convicts in the state penitentiary, Lansing, and finds that 160, of whom 88 are white and 72 colored, show signs of tuberculosis.

Election.—At a meeting of the Jefferson County Medical Association held in Valley Falls, June 30, the following officers were elected: president, Albert D. Lowry, Valley Falls; secretary and treasurer, Frederick P. Mann, Valley Falls; censors, Drs. Edgar C. Rankin, McLouth, and Millard F. Marks, Valley Falls, and delegate to the state association, Dr. David D. Wilson, Nortonville.

The Antituberculosis Fight.—Dr. C. S. Emley, state lecturer, started on his tour against tuberculosis August 1. He is traveling over the state in a car specially equipped for the work, expects to visit every town in Kansas, and will remain in the larger towns for a few days, giving lectures and teaching the people what the state is endeavoring to do in its fight against tuberculosis.

Personal.—Dr. Valentine V. Adamson, Holton, has been elected assistant surgeon of the Fort Dodge (Iowa) Soldiers' Home.——Dr. John C. Lardner has been appointed city physician of Chanute, vice Dr. Fred R. Hickey.——Dr. Walter C. Palmer, Kansas City, has been appointed superintendent and physician-in-charge of the hospital at Hiawatha.——Dr. Henry M. Stewart, Hutchinson, has won a suit in which he was sued for $5,000 damages for malpractice.

KENTUCKY

No More Corner Pumps.—A resolution has been introduced in the general council of Louisville calling on the Board of Public Works to draw up an ordinance doing away with the town pumps and to substitute hydrants.

Personal.—Dr. W. H. Nuttall, superintendent of the Feeble-Minded Institute, Frankfort, has resigned, and has been selected by Dr. A. C. Nevitt as physician of the Eastern Kentucky Hospital, Lexington.——The names of Dr. John R. Wathen and Dr. MacCracken, were omitted from the list of the faculty of the University of Louisville, Medical Department.——Dr. William B. Doherty has been appointed a trustee of the Louisville Public Library.——Drs. W. Horace Witherspoon and Carroll P. Price have been elected members of the board of health of Harrodsburg.——Dr. George W. F. Rembert, superintendent of the sanatorium of the Kentucky Antituberculosis Association, has resigned.——Dr. William P. Drake, Rockfield, has succeeded Dr. Eldon N. Hall, Woodburn, as physician of Warren county.——Dr. Philip H. Stewart, Paducah, has been elected president of the board of health of McCracken county, and Dr. Horace Rivers, Paducah, health officer.

LOUISIANA

New Sanitaria.—The new Fenwick Sanitarium for mental and nervous diseases and drug and liquor addictions has been opened at Abbeville under the directions of Frank F. and W. G. Young.——Dr. E. Y. Ames has leased the Mulberry Grove Hotel from Dr. M. G. Marrero, Covington, and will convert the building into a sanatorium for tuberculosis.

Personal.—Dr. Ada Schwing Kiplinger will open a free clinic at St. Mark's Hall, New Orleans, in September.——Dr. C. Milo Brady, New Orleans, special medical inspector of the State Board of Health, has resigned.——Dr. Lester J. Williams has been elected mayor of Melville.——Dr. Yves R. LeMonnier has been elected surgeon of the Soldiers' Home of Louisiana, vice Dr. William P. Brewer, deceased.

MAINE

Graduation Exercises.—The graduating exercises of the Medical School of Maine, Brunswick, were held June 23, and a class of 18 was graduated. The oration was delivered by Hon. DeAlva S. Alexander, Buffalo, N. Y.——The senior class of the school has presented to the school an oil painting of Dr. Edward J. McDonough, professor of obstetrics.

Personal.—Dr. John G. Towne, Waterville, has been appointed junior assistant surgeon of the Second Infantry, Maine N. G., vice Dr. Frederick A. Chandler, Addison, promoted to captain.——Dr. Thomas U. Coe, Bangor, has tendered to the University of Maine a site for the proposed home for its college of law, and in addition offers to give $1,000 toward the building.——Dr. John M. Eager has succeeded Dr. Parker C. Kalloch as quarantine officer at Portland.

MARYLAND

Personal.—The residence of Dr. Mylar P. Sutliff, Somerset Heights, was destroyed by fire July 27, with a loss of $5,000.——Dr. William S. Welch has been appointed health officer of Annapolis.

Outbreak of Typhoid Fever.—An appeal has been received by the State Board of Health to aid in the eradication of an outbreak of typhoid fever in Kent county. The investigation of the board shows that 26 cases have occurred the cause of which has not yet been determined.

New Health Plans.—Dr. Marshall L. Price, the new secretary of the State Board of Health, proposes to ask the legislature for an additional appropriation of $25,000, to be used in overcoming the loss to the state from disease. Among the improvements proposed are the wholesale purchase of nitrate of silver, to be put up in especially prepared packages, and sold or given to nurses and physicians, to be used in cleansing the eyes of the newborn, and the purchase of large numbers of standard disinfectant cards with instructions how to disinfect houses where there have been infectious or contagious diseases.

Baltimore

Change in Editorship.—The *Bulletin of the Medical and Chirurgical Faculty of Maryland*, with the close of Volume I, changes its editor, Dr. Henry O. Reik retiring, and being succeeded by Dr. Emil Novak. The *Bulletin* is strictly a society organ, devoted to the interests of the state society and its component county and local societies.

Illegal Practitioner Sentenced.—Robert H. Darrah, convicted in March last for the alleged practice of medicine without a license, is said to have been sentenced by Judge Gorter to imprisonment for thirty days in jail and to pay a fine and costs amounting to $32.25. An appeal was ordered, and the defendant was released on bail of $1,000.

President Remsen Goes to California.—President Ira Remsen of the Johns Hopkins University started for California August 1, with the referee board of consulting scientific experts, to obtain information regarding the methods used in drying fruits, in order to decide the question whether or not the so-called "sulphuring" process renders fruit unwholesome.

Personal.—Drs. Harvey W. Cushing, Frank Martin, Thomas B. Futcher and J. George Schmelzer have sailed for Europe.——Dr. St. Clair Spruill has been appointed associate surgeon to St. Agnes' Hospital, and Dr. J. F. O'Mara assistant.——Dr. J. Mason Hundley has been appointed visiting gynecologist to St. Agnes' Hospital.——Drs. Edward L. Mellus and William S. Baer have returned from Europe.

MASSACHUSETTS

Personal.—Dr. Freeman A. Tower, recently superintendent of the State Insane Hospital, Worcester, assumed charge of the Burbank Hospital, Fitchburg, July 19.——Dr. Arthur T. Schoonmaker has been elected town physician of Westfield.

Medical Examiner Wins Case.—In the case brought against medical examiner Andrew H. Hodgdon, Dedham, by Elizabeth Morton, in which $50,000 damages were asked on the claim that the medical examiner was negligent in not ascertaining that the plaintiff was unable to leave her home, the jury decided in favor of the defendant.

MICHIGAN

County Hospital for Tuberculosis.—At the recent meeting of the Board of Supervisors of Marquette county, $15,000 was appropriated for a hospital for tuberculosis, to be erected on the county house farm.

Jury Disagrees.—In the case of Dr. G. K. Boyajian, Detroit, who shot and killed his nephew, April 30, the jury disagreed, four voting for acquittal and eight favoring a compromise verdict convicting the defendant, but asking the governor to pardon him and to provide adequate punishment for home despoilers.

Personal.—Dr. Simon M. Yutzy, instructor in osteology and demonstrator of anatomy in the University of Michigan, Ann Arbor, has resigned to take effect in September.——The new city physicians of Detroit are Dr. George F. Lavin, George H. Voelkner, Joshua Hanser, W. G. Kanter, Philander B. Taylor and Edmund Quandt.

Communicable Diseases.—During June there were reported in the state 97 cases of pneumonia, 216 of tuberculosis, 67 of typhoid fever, 177 of diphtheria, 35 of meningitis, 110 of whooping cough, 213 of scarlet fever, 841 of measles and 64 of smallpox. This shows a decrease in typhoid fever, meningitis and smallpox, and an increase in pneumonia, tuberculosis, diphtheria, whooping cough, scarlet fever and measles.

June Mortality.—During June, 2,608 deaths were reported, equivalent to an annual death rate of 11.9 per 1,000. Of the number, 408 were infants under 1 year of age, 159 children from 1 to 4 years of age, and 826 individuals aged 65 years and over. Among the important causes of death were tuberculosis, 222; violence, 186; cancer, 145; pneumonia, 94; meningitis, 45; diarrhea and enteritis of infants, 39; measles, 25; scarlet fever, 19; diphtheria, 16, and whooping cough and typhoid fever, each 15. As compared with May, a slight decrease is noted in the deaths from tuberculosis, diphtheria, scarlet fever, measles, whooping cough, pneumonia and enteritis, and a slight increase in the deaths from pneumonia, cancer and violence. There were 7 deaths reported during the month from tetanus.

MISSISSIPPI

Cocain Seller Fined.—Dr. Sherrod, Meridian, a colored druggist, is said to have been fined $100 and to have been sentenced to imprisonment for sixty days, on the charge of the unlawful sale of cocain.

The State Medical School.—The Medical Department of the University of Mississippi will open for its first session in October. Prospects point to a large initial attendance. The faculty has been selected with the exception of a demonstrator of physical diagnosis.

New Hospitals.—The King's Daughters' Hospital, Grenada, has been incorporated for $10,000. The organization is supported by the local branch of the King's Daughters. A tract of 20 acres near Laurel has been purchased for $3,000, and will be used as a site for a new hospital.

Do Not Want Names Used.—Hinds County Medical Society, at its recent meeting, adopted resolutions declaring it unprofessional to use physicians' names in connection with illnesses, accidents, operations, etc., and requesting the papers of Jackson not to mention names of physicians in connection with the treatment of any case.

Personal.—Drs. William R. Card and Stevens have been reelected associate physicians of the Mississippi Insane Hospital, Meridian.——Dr. Orson M. Turner, Jackson, has been appointed local surgeon of the New Orleans Great Northern Railway.——Dr. Nolen Stewart, Meridian, has been appointed professor of nervous and mental diseases in the Medical Department of the University of Mississippi, and Dr. William Krauss, Memphis, Tenn., has been appointed dean and professor of pathology.——Dr. Harvey F. Garrison, Seminary, has been reappointed health officer of Covington county.

MISSOURI

New Hospital.—A permit was issued July 28 for the erection of the St. Louis Skin and Cancer Hospital, a four-story, fireproof structure, to cost $85,000.

College Will Not Reopen.—It is reported that the Homeopathic Medical College of Missouri, St. Louis, has temporarily suspended and will not reopen for the fall session.

Personal.—Dr. Louis E. Bunte, St. Louis, has been appointed a member of the State Board of Health, succeeding Dr. John T. Thatcher, Oregon, term expired.——Dr. G. Wilse Robinson, Kansas City, has been appointed superintendent of the Kansas City General Hospital.——Dr. George W. Davis, St. Louis, has been appointed first assistant surgeon of the Freedmen's Hospital, Washington, D. C.

Declares Cars Insanitary.—In an official letter, July 28, the governor calls on the State Board of Health to make an investigation of the sanitary conditions of sleeping cars and coaches operated on the railroads of the state. He calls especial attention to the insanitary conditions of closets and washrooms, both in ordinary cars and sleeping cars, and also to the fact of the promiscuous expectoration in cars.

NEBRASKA

New College Buildings.—The John A. Creighton Medical College has commenced the erection of a new laboratory building adjoining the college building proper, to cost $60,000. The building will be four stories in height, will have a frontage of 72 feet on Fourteenth street, and will contain nine general and private laboratories, besides clinic and lecture rooms, etc.——Plans have been accepted for the proposed group of buildings of the College of Medicine of the University of Nebraska, Omaha. The estimated cost of the group is $1,500,000, which provides for nine buildings built about a quadrangle, with a hospital in the middle. The $1,000 prize offered for the accepted plans was awarded to Shipley, Rutan and Coolidge, Boston.

NEW HAMPSHIRE

Personal.—Dr. Gardner C. Hill, Keene, has resigned from the staff of the Elliot City Hospital, and Dr. Arthur A. Pratte has been appointed to fill the vacancy.——Dr. Servule St. Pierre, McGregorville, has been declared insane, and committed to the state hospital.

Society Meetings.—The Manchester Medical Society, at its annual meeting, held June 13, elected the following officers: President, Dr. Walter T. Crosby; vice-president, Dr. Noel E. Guillet; secretary-treasurer, Dr. Clarence O. Coburn, and censors, Drs. Gustavus B. Morey, Wellington A. Thompson, Zatae L. Straw, Clarence O. Coburn and Clarence W. Milliken. Votes of thanks were passed to the retiring president and secretary-treasurer.——Dr. Frank Blaisdell, Goffstown, president of the New Hampshire Medical Society, was the guest of honor at the sixth semi-annual meeting of the Grafton County Medical Society held at the Mary Hitchcock Hospital, Hanover, June 1.

NEW MEXICO

State Society Meeting.—The first meeting of the New Mexico Medical Society to be held in the southeastern part of the territory, will be held in Roswell, September 15 and 16.

County Society Organized.—Physicians of Santa Fe county met at Santa Fe, recently, and organized a county medical society to be affiliated with the state and national organizations. Dr. William S. Harroun, Santa Fe, was elected president; Dr. Frank A. Yoakum, Cerrillos, vice-president, and Dr. James A. Rolls, Santa Fe, secretary and treasurer.

NEW YORK

County Laboratory Wanted.—Physicians of Nassau county have filed a petition with the board of supervisors, asking that a county laboratory be established and a county bacteriologist appointed.

District Society Meeting.—At the annual meeting of the Fourth District Medical Society, held in Plattsburg, July 8, Dr. Dayton L. Kathan, Schenectady, was elected president;

Dr. Grant C. Madill, Ogdensburg, vice-president; Dr. Frederick K. Resseguie, Saratoga Springs, secretary (re-elected); and Dr. George H. Oliver, Malone, treasurer.

Personal.—Dr. J. Walter Wood, Port Richmond, was attacked and assaulted near his home, August 6.——Drs. Francesco G. Rossi, Utica, and George W. Miles, Oneida, have been appointed lecturers of the State Board of Health, and Dr. Martin Cavana has been designated as medical expert.——Dr. Fred D. Andrew, Rochester, has been designated as medical expert and Drs. George W. Goler and Montgomery E. Leary, Rochester, as lecturers of the State Department of Health.——Dr. George H. Beers, Ticonderoga, was thrown from his automobile recently, breaking three ribs.

New York City

Italians Organize Society.—The New York Italian Medical Society has been incorporated with Drs. Antonio Stello, Vincenzo Sellaro, Antonio Scaturro, Giuseppe Tomasulo and Antonio Tarditi as directors.

Building for Physicians.—A 12-story office building is to be erected at 124 Joralemon street, Brooklyn, to be known as Galen Hall and to contain 45 suites of offices for the exclusive use of physicians and dentists.

Personal.—Dr. Thomas Addis Emmet will be one of the speakers at the exercises commemorative of the Battle of Yellow Ford, in Chicago, August 15.——Dr. Morgan G. Cutler was seriously injured in an automobile accident in Council Bluffs, August 1.——Dr. William H. Nammack, Far Rockaway, has been reinstated as coroner's physician of Queen's Borough.——By the will of Mrs. Marie H. Crawford, Pittsfield, Mass., $50,000 and the estate in Sheffield, Mass., is bequeathed to Dr. Thomas H. Allen.

Buffalo

Personal.—Dr. Robert F. Sheehan, Jr., has been appointed professor of hygiene at the University of Buffalo, vice Dr. Henry R. Hopkins, appointed emeritus professor.——Dr. Herbert Hill has resigned as professor of chemistry, toxicology and physics.——Drs. Jane W. Carroll, Regina Flood-Keys and Amelia Earle Trant are spending the summer abroad.——Dr. Albert P. Sy has been appointed associate professor of chemistry and toxicology in the University.——Dr. John H. Pryor has been placed in charge of the dispensary of the Buffalo Association for the Relief and Control of Tuberculosis.——Dr. Ernest Wende, health commissioner, has recovered from his recent illness and resumed his duties.

OHIO

Personal.—Dr. Adolphus W. Foertmeyer has resigned as receiving physician to the Cincinnati Hospital, and Dr. Adam E. Schlanse has been elected his successor.——Dr. George A. Fackler has been made vice-president of the new health board of Cincinnati, Dr. Mark A. Brown, health officer, and Drs. Edward W. Walker and John H. Landis have been appointed members.——Dr. James W. Miller has left for Europe.

Additions to the Faculty.—The trustees of the University of Cincinnati have made the following additional nominations in the medical department: Dr. Shaler Berry, lecturer on medical jurisprudence; Dr. Marion Whitacre clinical instructor in medicine; Dr. John A. Caldwell, clinical instructor in surgery; Dr. Clifford Sater, clinical instructor in diseases of the chest; and Dr. Albert H. Freiberg, professor of orthopedic surgery and supervisor of clinics.

OREGON

State Tuberculosis Board Organized.—The State Board of Tuberculosis Commissioners, created by act of the last legislature, met in Salem June 9, and decided to utilize the present building of the Deaf Mute School, east of Salem, as a temporary sanatorium for tuberculosis.

Hospital Notes.—Two of the older hospitals of Portland are completing large annexes. By the first of the year the annex of St. Vincent's Hospital will be ready, and the annex of the Good Samaritan Hospital, including a roof garden, is almost completed.——The new Sellwood Hospital was opened July 2. The building has been erected at a cost of $15,000.——Dr. John F. Calbreath, Salem, formerly superintendent of the Oregon State Insane Hospital, has purchased the interest of Dr. Wilson D. McNary, in the Mount View Sanitarium, Portland, and the Glencoe Sanitarium.

Personal.—Dr. Ferdinand H. Dammasch has been elected assistant health officer of Portland, vice Dr. Parker, resigned. ——Drs. Allan Welch Smith, George B. Story and Rupert J. Chipman have been appointed members of the board of health of Portland, vice Drs. Andrew J. Giesy, Robert C. Yenney and George F. Wilson, resigned.——Dr. Charles A. Ault, Enterprise, was seriously burned by an explosion of spirits on a train, July 7.——Dr. Calvin S. White, Portland, is reported to be critically ill in St. Vincent's Hospital.——Dr. Cortez H. Wheeler has been elected health officer of Portland, vice Dr. E. C. Pohl, resigned.

SOUTH CAROLINA

Pellagra.—At the August 6 meeting of the Abbeville County Medical Society, held in Abbeville, pellagra was studied. Several patients with the disease were presented, and Dr. James W. Babcock, Columbia, and Surgeon C. H. Lavinder, U. S. P. H. and M.-H. Service, presented papers.

Infirmary Opens.—Fennell Infirmary, Rock Hill, was formally opened July 21. The institution contains 18 rooms for patients, together with the necessary operating, sterilizing and other rooms, and in the basement there are two commodious wards for colored patients. The infirmary is the result of years of work of Dr. William W. Fennell, who is surgeon in charge.

GENERAL NEWS AND COMMENT

Personal.—Dr. Milton J. Rosenau, director of the Hygienic Laboratory of the U. S. Public Health and Marine-Hospital Service, has been appointed head of the newly established department of hygiene and preventive medicine in Harvard Medical School, Boston.

Railway Surgeons Meet.—The Buffalo, Rochester and Pittsburg Railways Surgeons' Association met for organization in Rochester, July 20, and elected the following officers: President, Dr. A. Miner Straight, Bradford, Pa.; vice-president, Dr. William B. Johnston, Ellicottville, N. Y., and secretary, Dr. Spencer M. Free, Du Bois, Pa.——At the twenty-ninth annual meeting of the Lehigh Medical Association held at Delaware Water Gap, Pa., July 22, the annual address was delivered by Dr. William L. Rodman, Philadelphia, on the treatment of hernia, and the following officers were elected: President, Dr. Obediah H. Sproul, Flemington, N. J.; vice-presidents, Drs. Jonathan M. Wainwright, Scranton, William E. Gregory, Stroudsburg, H. Herbst, Reading, and Henry A. Grim, Allentown; secretary, Dr. Clinton J. Kistler, Leighton, and treasurer, Dr. Albert A. Seem, Bangor.

Medical Colleges and University Connection.—Several medical colleges have become more closely connected with colleges of liberal arts during the past two years and are more completely under the control of universities, which doubtless means better laboratories, better teachers, and the adoption and enforcement of higher standards. In some of these sweeping changes have been made. (1) The Medical College of Alabama is now the organic Medical Department of the University of Alabama. (2) The University of Southern California College of Medicine is now the Los Angeles Clinical Department of the University of California. (3) Tulane University Medical Department has formed closer connection with the University and now has the buildings for the first two years of the medical course on the university campus. (4) The new Ohio-Miami Medical College of the University of Cincinnati will be under the direct control of the university. (5) Toledo Medical College is now the Medical Department of the newly established Toledo University, the development of which will be watched with much interest. (6) Tennessee Medical College has become the organic medical department of the Lincoln Memorial University. (7) It is stated that the new Medical Department of the Universities of Nashville and Tennessee will receive strong support from the University of Tennessee.

CANADA

Council Election.—The elections for the council of the College of Physicians and Surgeons of Saskatchewan, which recently took place, resulted as follows: Dr. Stanley Millar, Battleford; Dr. A. McG. Young, Saskatoon; Dr. James T. Irving, Yorkton; Dr. A. E. Kelly, Swift Current; Dr. W. A. Thomson, Regina; Dr. Hugh E. Eaglesham, Weybourne; and Dr. Andrew W. Argue, Grenfell.

University-Hospital Agreement.—A new agreement has been entered into between the trustees of the University of Toronto and the board of governors of the Toronto General Hospital. The university has added the sum of $400,000 to the $300,000 contributed a few years ago, on the understanding that the hospital will build on the site now being prepared a new pathologic building for the uses of the medical faculty of the university, and grant certain rights as to the appointments of heads of services. The subscriptions for the new hospital now amount to $1,300,000, the university debentures to another $300,000, and the value of the site of the old hospital is placed at $300,000. The cost of the new hospital is put down at $2,200,000, which still leaves $300,000 which the trustees of the hospital have undertaken to raise, as a part of the bargain with the university. The chief professors or other heads in the faculty of medicine of the university are to be ex-officio heads of services in the hospital. Other appointments are to be made to the hospital staff only on the recommendation of a joint committee composed of eight members, four each from the hospital and university. In a few weeks the ground for the new building will be prepared. It will be thoroughly ploughed, disinfected and then left until the spring, when excavations will be commenced.

FOREIGN

To Warn Students Against Exploitation of Physicians.—The profession in Belgium held a congress recently to discuss merely practical questions connected with medical practice—the fifth annual congress of the kind. Van Pée urged the necessity for instructing newly graduated physicians as to the various traps set for exploitation of the medical profession, into which they are liable to stray in their ignorance. He suggested instruction during the medical course, but others advocated a warning pamphlet for graduates, setting forth the rights and duties of the medical profession and the dangers that threaten the young physician. The importance of cooperation between the organized charities and physicians, in order to restrict free medical care to those actually unable to pay for it, was emphasized anew and a number of methods discussed how to render this more practicable. The *Gazette Médicale Belge*, July 15, contains the discussions in full.

New Insane Asylum at Naples.—One of the largest insane asylums in Europe has just been inaugurated in the vicinity of Naples. Twenty-seven buildings in large grounds form this city for the insane on the Capodichino hills; it has accommodations for 2,000 inmates and the new asylum at Rome for 1,063. Professor L. Bianchi is in charge of the Naples asylum.

Epidemic of Psittacosis.—A correspondent of the *Gazzetta degli Ospedali*, July 25, states that twenty-three scattered cases of an atypical pneumonia have been observed at Zülpich, near Cologne, with four deaths to date. The infection has been traced to two small parrots, recently purchased, in the house of the person first affected. The other cases developed among friends and relatives from a distance who had attended her funeral. The streptococcus cultivated from the cases was apparently identical with a streptococcus found in all the organs of one of the parrots. A vaccine was made with the streptococcus which seems to have aided in the recovery of some of the later patients.

Jubilee Anniversaries in the Profession Abroad.—A number of well-known physicians in Germany have celebrated their fiftieth professional anniversary this summer, including B. Fränkel, the editor of the *Archiv für Laryngologie*, who has taken such a prominent part in the campaign against tuberculosis. THE JOURNAL described, Nov. 17, 1906, page 1664, the international historical laryngologic exhibition held at Berlin that month in honor of his seventieth birthday. Another prominent laryngologist also celebrated his jubilee anniversary last month, A. Lucae, of Berlin, the author of the vibratory sound treatment of sclerosis of the ossicles. The honors paid to Sir Felix Semon on his retirement were mentioned in THE JOURNAL recently, page 308. The list of *Jubilars* includes further W. Ebstein, the clinician of Göttingen, who seeks his recreation in the study of the history of medicine. The July number of *Janus* publishes a two-page bibliography of his important contributions to the history of medicine alone. Other celebrants are the surgeon, B. Bardenheuer, of Cologne, one of the leaders in treatment of fractures by extension; the physiologist and hygienist, J. Rosenthal, of Erlangen; K. Eberth, professor of pathologic anatomy at Halle; L. Hermann, whose "Physiology" is in its thirteenth edition, and A. Bilharz, brother of the discoverer of the distomum. Bilharz practiced in this country from 1865 to 1878. In Spain, the eminent professors and clinicians, J. Calleja, dean of the medical faculty, F. de Cortejarena and M. Iglesias, were presented with souvenir medals by the Academy of Medicine at Madrid; other medals were given five other members whose professional career has also passed the fiftieth milestone.

Eighth International Tuberculosis Conference.—This conference was held at Stockholm, Sweden, July 8, with the attendance large and the discussions fruitful. A *Festschrift* presented to the conference gives a résumé of what Sweden has accomplished in the campaign against tuberculosis, containing many of the articles read by Swedish authorities. Buhre reported the growth of the Swedish National Association against Tuberculosis which now has over 22,000 members to a total population of 5,250,000. It maintains a tuberculosis exhibition and has had 976 public lectures delivered at various points since the organization of the association five years ago. Pamphlets for school children and for recruits have been issued and distributed by the thousands as also a special pamphlet warning against undue dread of the disease. Stipends for postgraduate courses at tuberculosis sanatoria for physicians and nurses are provided, and special study made of inexpensive sanatoria and a number of such erected. A special tenement house was also built with flats of one or two rooms and kitchen, rented at reduced rates to working-men's families in which one or both of the parents are tuberculous. The tenants are given extra fuel to compensate for the heat lost by the required ventilation, and the children are given their dinners. Facilities for bathing are also provided free. The tenement in Stockholm proved such a success that a similar one has been erected in a country district. The healthy children of tuberculous parents are boarded out in the country, 246 having been thus provided for by the association and 87 by the poor authorities, while a special asylum has been erected for such children whose parents prefer institutional rather than foster family care for them. The sale of the special tuberculosis stamps has realized $71,000 to date.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, July 31, 1909.

Radium in Diseases of the Eye

As stated in previous letters considerable attention is being devoted to radium in the treatment of disease. The latest development is its application to diseases of the eye. At the Moorfield's Hospital (the principal eye hospital in this country) Mr. Arnold Lawson, an ophthalmic surgeon and Dr. Mackenzie Davidson, a radiographic expert, have tried it in diseases which usually proved obstinate or improved slowly under ordinary treatment, or else were of a virulent nature requiring drastic measures. So far only 17 cases have been treated, but the results are most encouraging. Most of the lesions were corneal ulcers, 4 were non-ulcerative affections of the cornea and one was episcleritis. After one application for 5 minutes to a hypopyon there was distinct benefit. The patient was a man aged 35, who gave a history of injury to the right eye. There was a deep ulcer and a gray infiltrated area 4 mm. in diameter and a large hypopyon. Twenty-nine milligrammes of radium were applied for five minutes and five days later the congestion was subsiding and the hypopyon had disappeared. Two days after a second application he was discharged practically cured. All the other cases did very well. Some punctate erosions gave equally encouraging results, as also did old cases of trachomatous pannus, except in one case in which increased vascularity followed the treatment.

The Imperial Cancer Research Fund

The seventh annual report of the Imperial Cancer Research Fund has been presented by Dr. Bashford, general superintendent, at a meeting of the general committee presided over by the Prince of Wales. Dr. Bashford claimed that the arduous work done by the fund in the past seven years had effected a revolution in the cancer problem. Seven years ago no one conceived it possible that portions of the mammalian organism could be kept growing for a period four times the length of life of the animal. The number of different tissues now being propagated separately made it possible that the majority of tissues might be so grown and segregated. In other words a living animal could be analyzed into many of its living component tissues.

Annual Meeting of the British Medical Association

The annual meeting of the British Medical Association was held at Belfast on July 23 to 31. Though the number of members who attended (about 700) was not large, the meeting from every point of view—scientific and social—was a great success. The comparative smallness of the attendance compared with that of the previous meetings was no doubt due to the fact that the meeting was held in Ireland at a city not very acceptable to the great English centers of population from which it must be reached by a sea voyage. The meeting took place in the University of Belfast, the spacious class rooms and halls of which provided ample accommodations for all the sections. At the meeting of the representatives of the various divisions of the association, many medico-political and medico-ethical topics were discussed. One, to which allusion has already been made in THE JOURNAL, is of particular interest. Dr. Kirby of Birmingham moved "that the advertisement of patent foods, proprietary remedies and the like in the *British Medical Journal* is calculated to authenticate in the eyes both of the medical profession and of the public, the preposterous and often mendacious claims of the vendors, and that present condition of the advertisement pages is, in this respect, not creditable to the association." Dr. Kirby denounced many of the remedies advertised in the *British Medical Journal* as almost quack remedies, defining these as remedies of which the exact composition is not declared and which are widely advertised in the lay press. He held that the fact of such advertisements appearing seemed to the public to authenticate all that was said about them. The discussion revealed some divergence of opinion. While some members warmly supported the resolution and protested against the "prostitution of the pages of the *Journal*" by such advertisements, others held that the association could not give assurance of the veracity of every line that appeared in the advertising pages and that the fact of an advertisement appearing did not carry any sanction. Then the question was raised what would the carrying out of the proposal cost the association? The treasurer said that the *Journal* already refused many advertisements and that this cost them about $5,000 a year. He held that there was very little in the advertisements to complain of. Finally as compromise a motion was carried that the council instruct the *Journal* and finance committee to appoint annually a subcommittee for the revision of advertisements; that no advertisements be accepted until they have been approved by the subcommittee; and that the subcommittee shall not allow any advertisement to appear which contains misleading or exaggerated statements, nor any advertisement of any preparation which is advertised elsewhere than in the medical press as a remedy for any morbid condition, and is of such a character that its use demands medical supervision or which is advertised anywhere in misleading or exaggerated terms.

The president, Sir William Whitla, paid a tribute to the first occupant of the chair of medicine in the University of Belfast, created in 1836, Dr. Henry Macormac, father of Sir William Macormac, and "the father of the open-air treatment of consumption." In his works on "Consumption" published in 1855 he insisted on the influence of impure or rebreathed air as a cause of tuberculosis. But no one believed him; the discovery of his genius required half a century for its acceptance. Sir William criticized severely the present system of medical education. The number and extent of the subjects now placed in the medical curriculum were so great that the brain of the student failed to expand in assimilative power with the growth of advancing science.

Action Against a Hospital for Injury During Operation

In The Journal of May 15, page 1592, has been reported an extraordinary action by a physician against the governors of St. Bartholomew's Hospital. He alleged that while being examined under anesthesia his arms were allowed to hang over the sides of the table; that one was bruised by being pressed upon by the operator or some other person and that the other was burned by a hot water bottle; that the result was traumatic neuritis of both arms which paralyzed him and prevented him from following his profession. As he produced no evidence showing that he was injured in this way the judge refused to put the question of negligence to the jury and also held that even if there was evidence of negligence the governors were not liable for the action of their staff. The case then came before the court of appeals and was again dismissed.

PARIS LETTER

(From Our Regular Correspondent)

Paris, July 29, 1909.

Preservation of Medicinal Plants

The Academy of Medicine heard a report by M. Guignard, director of the Superior School of Pharmacy, on a work by MM. Perrot and Goris in regard to the sterilization of medicinal plants. It is well known that most plants lose a great part of their properties along with their freshness through chemical action. It is of importance then to arrest this chemical action as soon as the plants are gathered. Perrot and Goris treat the plants in an autoclave in the presence of alcohol vapors, after which the dry leaves preserve without modification the physiologic properties that they have in the fresh state. Experiments have been made chiefly on digitalis leaves.

The Instruction of Abnormal Children

The question of the instruction of abnormal and backward children, which for some years has been occupying physicians and educators, has just been brought before the Superior Council of Public Instruction. The latter has decided that in order to obtain certificate of fitness to teach backward children candidates will have to undergo a year's probation in a special establishment, designated by the Minister of Public Instruction, and affording opportunity to study at first hand the best means for attracting the attention of backward children and of drawing out their intelligence.

Prescription Clerks

An energetic campaign is now being carried on by the association of prescription clerks against the too long hours of work. Compelled to work fourteen to sixteen hours consecutively, often without a night service to assure them an opportunity to rest, the prescription clerks maintain that the situation is dangerous for the public itself, prescriptions put up under such conditions being liable to accident. The association has passed a resolution demanding a better regulation of their work by the closing of the laboratories at 8 p. m. and the creation of night municipal pharmacies.

Monument to Professor Liégeois

The tragic death of Professor Liégeois, who with Liebeault, Bernheim and Beaunis, founded the famous "school of Nancy," and who was the first jurisconsult to study the application of hypnotism and suggestion to criminal law and to legal medicine, was mentioned about one year ago (The Journal, Sept. 12, 1908, li, 929). A committee composed of the colleagues, friends and pupils of Liégeois has just been formed to erect to his memory a monument at Bains-les-Bains (department of the Vosges) at the spot where the scientist was killed by an automobile.

The Potain Prize

The Academy of Medicine has just been authorized to accept a legacy of $5,000 (25,000 francs), the accumulated interest of which for the three past years will serve to found a perpetual triennial prize in honor of the illustrious clinician who died a few years ago and which will be awarded to the author of the best work on clinical medicine which has appeared during each triennial period.

Election of Two Foreign Associates of the Academy of Medicine

In its session of July 27 the Academy of Medicine chose Drs. Hansen of Bergen and Morisani of Naples as foreign associates.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, July 22, 1909.

Cultivation of Spirochæta Pallida

The attempt to cultivate the *Spirochæta pallida* so as to demonstrate its etiologic importance by artificial infection of animals is continually being made and more favorable results appear to have been obtained. In the last number of the *Deutsche medizinische Wochenschrift*, Schereschewsky reports the continuation of his culture experiments in Neisser's clinic. He has succeeded in obtaining cultures of the spirochete, on horse serum, from primary affections of the fetal syphilitic spleen and blood and has been able to continue the cultivation to any desired number of generations. In the original cultures of the first few days the type of *Spirochæta refringens* is found almost without exception, but in the later generations and in the older original cultures the forms correspond to *Spirochæta pallida*. Animal experiments have, however, remained unsuccessful. Professor Mühlens has reached the same results and his work has been confirmed in the institute for infectious diseases. In the latter institute animal experiments with the pure culture of the spirochete are being carried on.

Personal

Professor Steyrer, first assistant of Professor Kraus in Berlin, has been chosen as the successor of Professor Minkowski for the position of director of the medical clinic at Greifswald.

The director of the medical clinic at Freiburg, Professor Bäumler, has resigned on account of age. He is succeeded by the previous director of the medical policlinic, Professor de la Camp. Professor Bäumler received the freedom of the city of Freiburg on the occasion of his resignation.

Professor Czerny of Breslau has received a call to the newly established chair of children's diseases in Strasburg. Professor Garré of Bonn has been given an honorary doctor's degree by the University of Geneva. Garré was born in Switzerland.

Physical Character of Recruits for One-Year Volunteer Service in the German Army

To obtain some statistical data with reference to the influence which the higher schools exercise on the physical development of the pupils, the military authorities determined in 1904 that, for every young man who appeared for enlistment in the one-year voluntary service (generally at the age of 19 to 24), a card should be filled out in which a number of questions regarding the condition of the volunteer's health should be answered. In this way, data were obtained regarding 80,454 recruits, from 1904 to 1906. Schwining and Nicolai, two military physicians, have published an article based on this material, giving very interesting results. The applicants for the one-year volunteer service as a rule show a somewhat higher degree of fitness than the other military recruits. The most unfavorable physical condition is presented by the pupils of the gymnasia, then follow the pupils of the technical gymnasia, technical schools and upper technical schools (*Realgymnasiasten, Realschüler, Oberrealschüler*).

If we take into consideration the time that passes between leaving school and enlistment, it appears that those who have had the shortest term of schooling show the greatest fitness and their number diminishes constantly the longer the school term; and, moreover, the number of suitable recruits diminishes in a still greater degree the longer the time that has elapsed since leaving school till the time of examination. While without doubt the latter fact is partly accounted for by the circumstance that weakly individuals, or those affected with other bodily defects, wait longer for volunteering for service than strong and sound men, still, in the opinion of the authors, the time since school of itself must exercise an especially unfavorable influence on physical development. The proportion of the more serious degree of unfitness increases with the length of the school period. Likewise, the gymnasia and technical gymnasia are distinguished from the other classes of schools by the higher degree of unfitness of their pupils. There are proportionally more tall individuals among the one-year volunteers than among the other recruits. The general degree of fitness increases on the average with increasing height. In general, the degree of fitness is lower among short recruits; but in four Bavarian provinces the conditions are exactly reversed. Among former pupils of the gymnasia, 47.8 per cent. had defects of vision; 36.9 per cent. were myopic. The number of those with defects of vision increase in the gymnasium pupils with the duration of their attendance at school. In general, 44.1 per cent. of the one-year volunteer recruits have defects of vision; 33.5 per cent. are shortsighted.

The Leipsic League

A report of the activity of the Leipsic League for the last year was made at the general meeting held in Lübeck, which gives a satisfactory account of the work accomplished by the executive committee. The league has now 22,440 members; nearly 2,000 members have joined within the last year; certainly a remarkable success when it is considered that the yearly dues are $5 (20 marks), times are hard for our profession, and the social relations of our profession are in general unfavorable. The various items of mail matter in the course of a year amount to more than half a million. Membership on the executive committee in general is honorary; only the two secretaries receive a salary, as they must naturally devote their entire attention to the league. The league includes 10 national or provincial leagues, 128 sections, 10 auxiliary groups. These leagues are directed by 1,100 superintendents. For purposes of agitation and at times of economic struggles, speakers are sent by the committee to the place affected. The committee maintains a bureau for legal information and a bureau to secure places for assistants, substitutes and ship's surgeons. Last year 2,227 places of the first two classes were provided and 244 of the latter. The league also carries on its own book business, retails books and publishes a physician's calendar. The committee also maintains a correspondence department in which communications to the political medical press are reprinted, and a bureau, sustained by the voluntary contributions of physicians, for the assistance of the needy widows of physicians. The receipts for the last year amounted to $4,440 (18,500 marks); the resources on hand amount to $3,600 (15,000 marks); the expenditures were $4,560 (19,000 marks). The largest pecuniary transactions of the committee were necessitated by the conflicts with the *Krankenkassen;* in this work sometimes physicians who threatened to appear as strike-breakers were dissuaded by money contributions and in other cases members who were compelled to give up their positions with the *Krankenkassen* in consequence of the strike were assisted pecuniarily until the end of the struggle. In this way large sums were expended which were secured not only by the yearly dues of the members, but also by voluntary contributions from German physicians.

VIENNA LETTER

(From our Regular Correspondent)

Vienna, July 28, 1909.

The Antimalaria Campaign in Austria

In southern Austria malaria was until recently so prevalent that energetic measures had finally to be adopted. In 1907 and 1908 the sanitation of the entire province of Dalmatia was effected. In the first year 212 towns and villages, with 89,000 inhabitants, were dealt with. Twenty-three physicians and 359 attendants were engaged all the year round. All suspected ponds and cisterns were filled up and a thorough examination of all affected persons with a routine treatment instituted. There were 3,400 persons with chronic malaria and 6,417 fresh cases, or 43 per cent. of the entire population, to be treated. In only 5,750 cases no swelling of the spleen could be discovered. Quinin and iron were given for fifteen days in full doses in chronic cases, and quinin alone in acute cases. No after-treatment was adopted. In 20 per cent. there was recurrence; this was treated by the same method. No prophylactic doses were distributed.

Altogether, 630 kilos (about 1,700 pounds) of quinin were used, or about 15 gm. (half an ounce) *per capita.* A rapid diminution of serious cases was noted; while formerly more than 10 per cent. of all patients had spleens reaching 4 inches or more below the costal arch the number soon fell to 3 per cent. The expense was very low, $50,000. In 1908, of 113,000 new subjects, only 4,350 were found without swellings of the spleen. In 18 per cent. there was recurrence after treatment. The amount of quinin distributed was 725 kilos, or over 1,900 pounds, an average of 14 gm. per person, as 39 per cent. of the population were affected. In 1909, the remaining district, with a population of 220,000, will be dealt with, and thus the whole country will be rid of the disease.

Pharmacology

PAPAYANS BELL

Report of the Council on Pharmacy and Chemistry

The following report of a subcommittee was submitted to, and adopted by, the Council and its publication directed.

W. A. Puckner, Secretary.

Papayans (Bell) made by Bell & Co., Orangeburg, N. Y., is said to consist of the "digestive principle obtained by our own exclusive process from the fruit of *Carica papaya*, combined with willow charcoal, chemically pure sodium bicarbonate and aromatics." The following statement appears on the package: "For the treatment of dyspepsia, flatulence, nausea, vertigo, hyperacidity, palpitation and other symptoms of indigestion and the vomiting of pregnancy. Peritonitis, cholera morbus, alcoholism and seasickness." "Digests every variety of food, removes every symptom of indigestion, restores the entire digestive tract to a normal condition." The dosage is recommended as follows: "From one to three tablets before meals, or two hours after eating. In severe cases, three tablets dissolved in hot water and repeated as necessary."

A circular which accompanies the package details the therapeutic virtues of the preparation and contains what purports to be extracts from medical journals, in which Papayans is recommended.

Examination of specimens purchased in the open market showed them to contain the following ingredients: Charcoal, sodium bicarbonate, ginger, saccharin and oil of gaultheria. As the product is said to contain papain, the presence of enzymes was tested for, with the result that it was found to possess neither proteolytic nor amylolytic properties. The results of our examination are in accord with the results obtained by a member of the Council, who examined the product independently, and who writes:

"We have made some extended tests with Papayans Bell, and find that the tablets consist essentially of sodium bicarbonate and charcoal, with a little flavoring matter. We find no digesting power for starch or egg albumin. At any rate, no appreciable change follows in the albumin in three hours, and no conversion to sugar in the same time, or change of starch to a point where the iodin reaction is weakened. The product seems to be practically inert."

It is recommended that Papayans Bell be refused recognition, and that publication of this report be authorized.

Comment: It will be remembered that two other products of Messrs. Bell & Company have been discussed in this department: Salacetin (Bell)[1] and Sal-Codeia (Bell)[2]. Salacetin was examined with several "synthetics" which all turned out to be mere acetanilid mixtures. Salacetin, advertised as "a combination, with heat, of Salicylic and Glacial Acetic Acids and Phenylamine" when examined "was found to be a mixture and to contain the following ingredients approximately in the proportion given: Acetanilid, 43; sodium bicarbonate, 21; and ammonium carbonate, 20." Sal-Codeia (Salacetin-Codein) therefore, would be the same with codein added.

Papayans (Bell) seems to be consistently fulfilling the life-history of the average nostrum. Made of well-known drugs and invested by its manufacturers—or exploiters—with virtues absurdly disproportionate to the known properties of the alleged constituents of the nostrum, the preparation was introduced to the world *via* the medical profession. With the help of thoughtless physicians, aided by a skillful and aggressive advertising campaign and augmented by the "free sample" device, the business grew and prospered. The bottles *with the name and address of the company blown in the glass* and with the varied therapeutic indications for the nostrum printed both on the label and on a circular in which the bottle is wrapped, have carried the manufacturer's message to the drug-taking public.

Apropos of this point, the recent "literature" contains what purports to be endorsements of the nostrum by medical journals. Thus there is quoted from the *New York Medical Journal*, Jan. 2, 1909, in part, the following recommendation: ". . . we venture to suggest to our readers who have not tried this remedy that they prescribe one *original sealed package* of Papayans (Bell) and that they carefully note the results from its use." [Italics ours.—Ed.] Having seen an "original sealed package" we believe that we can predict the "results from its use." On any patient not mentally unbalanced, the result would be that the next dose of Papayans (Bell) he thought that he needed would be purchased from the druggist direct.

That such results are not hypothetical is evidenced by the statements of the exploiters of Papayans (Bell) that "the annual sale now exceeds four hundred million tablets." Assuming this statement to be true, it would be necessary for every physician in the United States to prescribe over three thousand of these tablets every year—if they reached patients only through the physician! The company's own figures indicate that the time is about ripe to take care of this vast army of self-drugging laymen and recent circular letters seem to recognize it. The physician is notified that druggists are now furnished with Papayans (Bell) "in sealed packages of thirty and one hundred tablets." The medical man is *told that the firm has "not forgotten the days* when physicians' orders made our success possible" and it says *it is* "sincerely grateful to the doctors who gave us orders in the days when we were struggling for recognition." This tacit admission of the value of the physician as an unpaid agent for nostrum houses should be given thought by those physicians who prescribe such preparations.

While, so far as we know, Bell & Co. have not yet advertised in the daily press, they are not averse to furnishing the laity with samples when requested. An Ohio physician sent us the following letter received by a young woman who had written asking for samples:

> Miss X—— Y——,
> Z——.
>
> Dear Madam: As requested, we are mailing you sample of our Papayans (Bell) for Indigestion
>
> If a sufferer from Indigestion, we want you to give it a thorough trial as directed and note remarkable results that we believe you will get from its use.
>
> Kindly write us if you are unable to obtain it from your local druggist, as it is stocked by nearly every good drugstore in the United States. Yours truly,
>
> Bell & Co.

Evidently Bell & Co., while admitting that their financial success is largely due to the kindly, though misguided, efforts of physicians, are not going to let a little thing like loyalty to the medical profession interfere with a possible sale of their tablets.

THE L. D. JOHNS COMPANY

A discussion of the methods of Bell & Company would not be complete without reference to a concern which seems to be closely connected with it: the L. D. Johns Company, whose "only product" is a sugar-coated laxative tablet. Regarding the "sugar coated" tablet, a visitor at the place of business of Bell & Company and the L. D. Johns Company, wrote: "These companies apparently are not in possession of any tablet coating machines and in questioning on this point stated that some of their tablets were sent out to be coated." There is a sameness regarding the claims for the laxative tablets of the two companies that might lead *one* to *suspect* that the same individual prepared both. For instance:

Cascarans (Bell)	Dr. John's Tablets
"Taken as directed, it permanently removes the great majority of cases of habitual constipation."	"Taken as directed . . . permanently remove the great majority of cases of habitual constipation, *torpid liver* and sick headache."
" . . . a harmless vegetable preparation."	"A harmless vegetable remedy."
" . . . for the removal of pimples, yellowness and greasiness of the skin . . ."	" . . . removes pimples, blotches, sallowness and greasiness of the skin . . "
" . . . one tablet at night, one night and morning, or, in severe cases, one three times a day, gradually decreasing the frequency of the dose as improvement permits."	"One at night, one night and morning, or, in severe cases, one three times a day. Gradually decrease the frequency of the dose as improvement permits."

According to a leaflet sent out with samples by the L. D. Johns Company, the company is capitalized for $500,000, divided into 50,000 shares at $10.00 each; these shares are sold to those physicians who will agree "to prescribe the tablets at every suitable opportunity, to introduce them to other physicians" and "to promote their sale in every ethical way"! If the list of physicians' names and addresses which the company sends out as comprising the eastern stockholders is to be relied on, it would seem that many medical men are promoting their sale. In prescribing it is, of course, "necessary to specify 'Dr. Johns' Tablets No. XXX (*Original bottle*).'" As the name is on the bottle, it is not unbelievable that, as the company says in its prospectus, because of "our method of advertising, a large and very profitable business is being created." That the L. D. Johns Company expects to profit by the self-drugging which this method of prescribing fosters is evident:

> "Physicians not stockholders in this company suffer from the continual refilling of their prescriptions and from the recommendation of the *preparation prescribed by patients* to others. [Italics ours.—Ed.] Our stockholders *benefit* by the refilling of their prescriptions and by these recommendations."

Put baldly the case amounts to this: Physicians who prescribe "Dr. Johns' Tablets" not only are likely to foster self-drugging, but they will reap dividends therefrom. Truly a nice business to be in!

While Bell & Company and the L. D. Johns Company are said to be entirely distinct, they are to be found at the same address at Orangeburg, New York, and as will be seen, the officers of the two companies are more or less related.

BELL & CO.		L. D. JOHN CO.
President - -	John L. Dodge -	President
Secretary - -	Geo. C. Tennant	Vice-president
Vice-president -	Chas. B. Smith -	Sec'y & Treasurer

EXPLOITING THE PROFESSION

Nostrum promoters have two simple ways of "working" the medical profession. The first—and the more profitable—is, by lavish distribution of free samples, to get physicians to prescribe the blown-in-the-glass "original package" with the inevitable result of large sales direct to the laity. By the second method, which is merely a modification of the first, the physician furnishes the capital for floating the nostrum and then takes his share of the resulting profits. There may not be quite as much money in the second method for the promoter, but then the risks are correspondingly less. If the firm fails, the stockholders are the losers; the promoter is not necessarily "out" anything. From a commercial standpoint, a combination of the two methods is, of course, ideal.

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[1] The Journal, June 3, 1905 and July 1, 1905: reprinted in the "Propaganda for Reform in Proprietary Medicines."

[2] The Journal, Nov. 4, 1905; reprinted in the "Propaganda for Reform in Proprietary Medicines.".

MADAME YALE'S PREPARATIONS

The Latest Series of Nostrums Officially Demonstrated to be Humbugs

A few of the convictions under the Food and Drugs Act have been noted in The Journal, April 24, 1909. One of the latest "notices of judgment" emanating from the Board of Food and Drug Inspection at Washington refers to the misbranding of a number of preparations marketed by one Maude Yale Bishop Wilson, of New York City, who rejoices in the euphonious trade name of "Mme. Yale."

MME. YALE'S EXCELSIOR SKIN FOOD

One of the preparations was known as "Mme. Yale's Excelsior Skin Food" and was advertised as "a marvelous nourishing product that feeds through the pores of the skin. . . . Can not be duplicated as it is compounded by Madam Yale personally and protected by a chemical secret. . . . The only genuine skin food in the world. It is absolutely guaranteed to remove wrinkles and every trace of age from the face of all who use it."

The government chemist analyzed this "marvelous" product and found that "it consisted of 76.5 per cent. of vaselin which was mixed with fixed oil or fat and zinc oxid, colored with a pink dye and perfumed."

MME. YALE'S EXCELSIOR FRUITCURA

Mme. Yale's Excelsior Fruitcura is, according to madam, herself, "primarily 'Woman's Tonic,' a cure for every ill to which she is sexually heir from Infancy to Old Age. It is Nature's prompt omnipotent Restorative—a Specific for the Generative Organs—Fruitcura cures the so-called 'Incurable.' It is an Elixir of Life—It prevents and cures Prolapsus or Falling of the Womb and all Displacements of Womb or Ovaries."

This also was analyzed and found to consist "of 76.97 per cent. of volatile matter (largely water with 16.66 per cent. of alcohol by volume), 29.71 per cent. of sugar and small quantities of plant drugs."

MME. YALE'S FERTILIZER TABLETS

Still another preparation was "Mme. Yale's Fertilizer Tablets," which were recommended as "A Cure for Obesity" and "A specific for curing . . . all Gastric troubles." The government chemist said that "the tablets were very largely composed of charcoal compounded with potassium bitartrate and sugar."

MME. YALE'S EXCELSIOR HAIR TONIC

"Mme. Yale's Excelsior Hair Tonic" was found to consist "of 15.56 per cent. of alcohol by weight, 82 per cent. of water and small amounts of glycerin, perfumed with bergamot oil." If "Mme. Yale" is to be believed, this mixture of alcohol and glycerin "stops hair falling, cures and prevents Dandruff and all Scalp Diseases and overcomes any hereditary tendency to Baldness or Grayness."

MME. YALE'S EXCELSIOR COMPLEXION BLEACH

Another of the Madam's preparations was claimed to "remove moth patches and all skin discoloration" and in addition "creates natural beauty." But that is not all: "It purifies the entire skin, penetrating its remotest recesses—invigorates nerves, muscles and ligaments—makes the flesh firm and searches out and expels every impurity. Its compound is a chemical secret known only to Madam Yale."

No longer is it a secret for we read "the analysis of the . . . Complexion Bleach, disclosed that it was mainly a saturated solution of borax in orange flower water."

MME. YALE'S ANTISEPTIC

"Mme. Yale's Antiseptic" was also alleged to possess remarkable properties. "Used in the bath is a sure cure and preventive of . . . all diseases of the skin and scalp. It is a perfect Disinfectant, Deodorant, Germicide, Prophylactic and Antiseptic, destructive of all disease germs, bacilli and all bacteria of micro-organisms [*sic*] yet it is 'non-toxic.'" In addition it was a "Sure preventive of typhoid fever."

This destroyer of "all bacteria of micro-organisms" was analyzed by the Bureau of Chemistry and found to consist "of 97.6 per cent. of volatile matter (16.96 per cent. of alcohol by weight, 4 per cent. of formaldehyd, and water), 2.37 per cent. of boracic acid and aromatics."

MME. YALE'S BLUSH OF YOUTH

"Blush of youth is refreshing as concentrated dew, pure as purity—It overcomes all inactivity and imperfection of the skin and underlying structure; spiritualizes the expression and gives the countenance the glow, luster and beauty of Childhood and preserves the morning of life indefinitely." "Blush of Youth" it should be explained is but one more of Mme. Yale's marvelous preparations.

For those who, like Ponce de Leon of old, are looking for something in this line, the analysis of the government chemist may prove interesting: "Mme. Yale's Blush of Youth . . . consisted of 56.15 per cent. of volatile matter (6.30 per cent. of alcohol by weight and 49.85 per cent. of water, colored with a cold tar dye and perfumed), and about 43.85 per cent. of glycerin." This would seem to show that the long-sought fountain of eternal youth consists essentially of a mixture of water and glycerin, with a dash of alcohol.

These various preparations, comprising in all over eighty dozen packages, had been shipped to S. Kann Sons & Co., Washington, D. C., by "Mme. Yale." They were seized by the government and samples of the various preparations were subjected to analyses in the Bureau of Chemistry of the Department of Agriculture. By comparing the analyses with the statements on the labels and circulars enclosed with the several preparations "it was apparent that these statements were false, misleading and deceptive and the preparations misbranded within the meaning of Section 8 of the Food and Drugs Act of June 30, 1906." These preparations of "Madam Yale's" thus furnish the latest addition to the government's galaxy of officially demonstrated humbugs.

Sanitariums and the Acetanilid Habit

To the Editor:—I enclose herewith a "form" letter and question blank which I received recently from St. Louis. I may be entirely too wary but I am suspicious that this is a collection of "statistics" to combat the work of the medical profession in educating the physician and the laity in the harmfulness of acetanilid and similar preparations.

G. H. Benton, M.D., Chester, W. Va.
Sterling-Worth Sanitarium.

Comment: The letter which Dr. Benton encloses is in facsimile form and purports to come from Uriel S. Boone, M.D., of St. Louis, who states that he is "preparing an exhaustive article for publication in a leading medical journal" on the question, "Is acetanilid a habit-forming drug?" To obtain the necessary data Dr. Boone is "writing to every hospital and sanitarium in the United States." Examination of the question blank which accompanies the form letter discloses the fact that information is wanted regarding not acetanilid alone, but also antipyrin and acetphenetidin (phenacetin). The last question asked runs as follows:

> "If your records [of cases of habitual use of these drugs] are incomplete, would you allow a reputable physician to investigate the above mentioned cases so that he could write with positiveness about them, and, if necessary, *make oath to the truth of his report?*" [Italics ours.—Ed.]

Dr. Boone opines that the recipients of his queries "may hesitate to answer" the question just quoted, but he trusts that its importance will be evident when he explains that "it is currently reported that the manufacturers of acetanilid, phenacetin, etc., *have decided to prosecute all libelers of these drugs*" [Italics again ours.—Ed.] and he wishes to make no statement that he "can not substantiate under oath." Surely the life of the collector of medical statistics is unusuallly hazardous.

For the purpose of aiding Dr. Boone in his arduous search for truth on the "much mooted question, 'Is acetanilid a habit-forming drug?'" we direct his attention to a work that should prove of invaluable assistance. We refer to Bulletin 126 of the Bureau of Chemistry, entitled "The Harmful Effects of Acetanilid, Antipyrin and Phenacetin." This interesting study to which we have previously (THE JOURNAL, July 24, 1909, p. 303) called attention, records 112 cases of the acetanilid-habit. Of this number, at least 50, or 44.6 per cent. of the cases were those of patients who took proprietary preparations of the drug. From this we would not wish to give any bias to Dr. Boone's statistics. We hardly expect, however, that such will be the case. Dr. Boone's name appears as the author of an article entitled "A Therapeutic Study of Antikamnia and Heroin Tablets"—an article that has been very extensively "quoted" and has been sent out in its entirety by the Antikamnia Chemical Company. Under these circumstances we may be forgiven if we venture the opinion that Dr. Boone is not likely to be unduly prejudiced against "headache tablets" in general and fake "synthetic" coal-tar mixtures in particular. We await with breathless interest the appearance of Dr. Boone's "exhaustive article" and we must confess to some degree of curiosity regarding the name of the "leading medical journal" in which these invaluable data will appear.

Correspondence

The Teaching of Obstetrics

To the Editor:—Interest in the plan which has been advocated for so many years by the American Academy of Medicine looking to a higher standard of medical education is now being intensified by the report of the Carnegie Foundation concerning various schools throughout the country. The requirements of our state boards of health must appeal to the graduate himself. Dr. Arthur D. Bevan's splendid work in the Council on Medical Education and the rapid advance in the requirements of the Association of American Medical Colleges are hopeful signs of the times. All these efforts, it is to be hoped, will soon be focused in a uniform course of study in the various colleges which will harmonize the various teaching faculties to the benefit of the student.

No phase of the very intricate question of division of time in the curriculum of the medical school of to-day is of more interest to the student nor more likely to be unappreciated by the faculty than that pertaining to the relative value of obstetrics as compared with gynecology and surgery. A knowledge gained by correspondence with a number of the eminent teachers of obstetrics and gynecology shows a remarkable unanimity of opinion among them that obstetrics in our colleges does not cover the ground it does abroad nor what it should to give the student a real *Frauen Klinik* instruction; but at present the trend of the average student in the clinical years is to over-emphasize the more spectacular surgical clinic and to minimize research work and clinical diagnosis which must be the foundation of basic principles for the subsequent results in actual bedside practice.

At the recent conference of the subcommittee on curriculum of the clinical years of the Association of American Medical Colleges, held in Atlantic City, the importance of a just distribution of the 2,000 hours of the clinical years was made clear. Professor Reuben Peterson, of Ann Arbor, and I, to whom the subject of obstetrics and gynecology was assigned by President Hoxie, are trying to obtain an expression from the heads of the departments of surgery, gynecology and obstetrics, relative to the proper place of each in the curriculum, and the line of demarcation between them on hazy subjects, as a basis for our report to the next annual meeting of the association, in Baltimore, next March.

When the student is taught principles of diagnosis, and operative surgery is made a postgraduate subject, the young practitioner will more nearly appreciate his instruction. A physician of ten years' experience, a graduate of an Eastern college, came into my office to-day who had never been taught forceps, nor version, nor manikin work while in college, and has always been so honest that he has invariably called on a neighboring friendly consultant to deliver his difficult cases for him. He has now resolved to take a clinical course in obstetrics to prepare himself for his work.

Every student when he graduates and goes out into the world on his own resources realizes his handicap of lack of accurate diagnosis. He does not need a vast demonstration of heroic surgery; he will call a competent surgical expert for that part of his work. What he needs is diagnostic ability in internal medicine and surgery and skill to manage his obstetric patients so that his care of them will not be a reproach to him, nor to the school from which he has graduated.

GEORGE CLARK MOSHER, Kansas City, Mo.

Contagion and Consistency—A Rejoinder

To the Editor:—I note in THE JOURNAL, July 24, a communication from Dr. Emil Roy on "Contagion and Consistency." It is not improper to remark that the writer would do well to show in his statements some consistency with the real facts which are being brought out in investigations of infectious diseases. Such statements as: "Clothing and other fomites are great carriers of infection," and "infected clothing that has been unused for years has been the cause of epidemics," are admitted by authorities, well able to judge, to be made entirely without sufficient grounds, and there is yet to be recorded a single satisfactory substantiated instance that shows such to be the case.

As stated recently by Dr. A. H. Doty, health officer of the Port of New York, in the *American Journal of Medical Sciences*, the old custom of attributing every obscure source of infection to fomites, has too long been in use by the medical profession and has proved a hindrance to the real solution of the problem of infectious diseases.

The work of Kayser, Drigalski, Lentz and Conradi on typhoid; that of von Lingelsheim, Osterman, Flügge, Kolle and Wassermann, Elser and Huntoon and others in cerebrospinal meningitis, and the investigations of the various boards of health, notably Massachusetts and New York, on scarlet fever and diphtheria, indicate in no uncertain manner that the time is passed when but a minor number of infections can be promiscuously laid to clothing, books and what not, and that the greater portion of infections with so-called contagious diseases, can be definitely traced to direct contact of uninfected persons with individuals who either in health or ill with the disease, are harboring and excreting the specific organism.

In place of Dr. Roy's statement that "we understand the germ theory and how diseases are disseminated," it would be well to substitute: "We are beginning to understand the real manner in which diseases are disseminated," and that the theory of fomites in this connection is largely exhausted.

H. S. HAMMOND, M.D., Trenton, N. J.

"Data is"—A Protest

To the Editor:—Correct—not to say elegant—English is most desirable in medical literature as in all other publications. The erroneous use of "data" with a verb in the singular is becoming deplorably frequent. I have seen it lately in no fewer than four instances: in a recent number of THE JOURNAL, by a well-known surgeon; in a medical paper, by a promising young investigator; in a scientific report on the Panama Canal; and in an editorial in one of our best weeklies.

"Data" is of course the plural of "datum," as "strata" is the plural of "stratum." Its use with a verb in the singular, as acknowledged by the editor of the paper alluded to, is due to haste and carelessness. It can hardly be attributed to ignorance in any of the four instances cited. But it ought never to occur.

Is not this one of the cases in which the editor or the proofreader should correct so evident a slip and not allow the error to become habitual? "Where am I at," from being a joke, is in danger of becoming a common locution. The same possibility exists in "data is" unless checked at the beginning.

W. W. KEEN, Philadelphia.

Miscellany

Epidemic of Urticarioid Dermatitis from a Mite in Straw Mattresses

In a preliminary report to the Surgeon-General of the Public Health and Marine-Hospital Service, Drs. Joseph Goldberger and Jay F. Schamberg call attention (Public Health Reports, July 9, 1909, page 973) to an epidemic of urticarioid dermatitis due to a small mite (*Pediculoides ventricosus*) in the straw of mattresses. The epidemic had prevailed in Philadelphia and vicinity since the early part of May, 1909, though the authors state that the disease probably occurs more or less in various parts of the United States. This eruptive disease was first noted among a crew on a private yacht docked in the Delaware river; at about the same time more cases appeared among the crew of other boats and also various private residences and boarding houses in Philadelphia and vicinity.

In nearly every case it was determined that the patients had either recently slept on new straw mattresses or had freely handled the same. The various mattresses had come from one of four different manufacturers, all of whom obtained their straw from the same source. In order to establish experimentally the etiologic rôle of the straw, one of the authors exposed a bare arm and shoulder for one hour between two straw mattresses. Sixteen hours later the characteristic itching eruption occurred. Later three people voluntarily slept on some of the mattresses for one night and each developed the eruption. Untreated siftings from the straw when applied to the axillæ produced the eruption; siftings that had been exposed under a bell jar for one hour to the fumes of chloroform, when similarly applied, proved innocuous. Careful scrutiny of some of the fresh siftings disclosed the presence of a very small mite which, when applied to the axilla, produced the characteristic eruption. The mite was identified by Mr. Nathan Banks of the United States Bureau of Entomology as being "very close to, if not identical with, *Pediculoides ventricosus.*"

The eruption consists of wheals, nearly all of which are surmounted by a central vesicle which becomes pustular. The primary efflorescences may be erythemato-urticarial spots or papulo-urticarial lesions, varying in size from that of a lentil seed to that of a finger nail, and are rounded, oval or irregular in shape. The lesions but rarely show the pinkish-white anemic area of ordinary "hives," being usually of a warm rose color. The eruption extends over the neck, chest, abdomen and back, and in a lesser degree over the arms and thighs. Scattered lesions may appear on the face, but the hands and feet are usually free. Some patients exhibit systemic symptoms; malaise, anorexia and sometimes an elevation of temperature of from 99 F. to 102 F. There may be a moderate enlargement of the subcutaneous lymph glands and a transient albuminuria. The condition is likely to be confounded with urticaria, chickenpox or scabies.

Prophylaxis consists in exposing the mattress to the fumes of sulphur or formaldehyd in a vacuum chamber. For the relief of itching and the cure of the cutaneous condition, the authors recommend the following:

℞.	gm.		
Betanaphtolis	2		gr. xxx
Sulphuris præcipitati	4	or	ʒi
Adipis benzoinati	31		℥i

Accidents in Obstetric Operations and Their Forensic Aspect.—O. von Franqué calls attention to the excellent provision adopted in Austria in 1903 for all charges of malpractice against physicians. When a suit is to be brought against a physician for alleged malpractice, the prosecuting attorney must first obtain a certificate on the affair from the faculty of the university, signed by at least nine members of the faculty after two or three have studied the matter thoroughly and made out the certificate. If this certificate testifies that there has been no criminal malpractice, the affair ends there so far as the prosecuting attorney is concerned, and it does not become public, although the injured parties may still bring a civil suit, but they generally realize the hopelessness of their case and desist. By this means physicians are protected against heedless bringing of suits which tarnish their professional reputation even if terminating in acquittal. Franqué contributes an article on the subject to the *Sammlung klinischer Vorträge*, No. 524, reviewing a number of experiences in this line to which he had to testify while in the medical faculty at Prague. In one case the obstetrician mistook a breech for a frontal presentation in a difficult labor and attempted to perforate, supposing the child was dead. It proved to be alive and was born with a wound in the thigh and transient peroneus paralysis, but no other injury either to mother or child. The parents sent a lawyer to the physician to demand damages, but he threatened a counter suit for blackmail and the matter was dropped. In another case the obstetrician drew out the entire uterus and adnexa, his hand entering through the posterior vault of the vagina and a long rent in the uterus, when he supposed he was merely releasing the placenta. In another case of laceration of the uterus the obstetrician left the patient before delivery of the placenta, saying that nothing more could be done at present. In a fourth case, a vesicovaginal fistula following a forceps delivery was ascribed to the physician's carelessness. The faculty certificates in all these cases stated the grounds why the physician was not responsible for the fatality. The public never learned of the affair in some cases. Franqué urges all obstetricians to make an unfailing practice of writing out in detail the next day the complete history of the case when an accident of this kind has occurred. Such a candid, objective history, made out before there is any question of legal proceedings, has great influence on the authorities and experts, and will often turn the scale against any assumption of negligence. The favorable outcome in the first of the above cases was evidently due to this history of the case written spontaneously and objectively while the data were fresh.

Problem of the State in the Care of the Insane.—The task which a state must face in the care of its insane is outlined by Adolph Meyer in the *American Journal of Insanity*, April, 1909, follows: 1. The care of the insane is to be organized so that care is given at as early a date as possible, that is, before the time when commitment is now thought necessary. 2. A system of notification of a mental health board is to make organized activity possible; and adequate provisions with hospital nurses, not policemen and jails, must be available, pending the transfer to the specially organized hospitals. 3. The special hospital must have adequate treatment divisions where it is possible to become thoroughly acquainted with all the facts about the patient before his transfer into the ordinary observation wards for a more lasting stay. 4. Even in the wards for the supposedly more chronic cases, standards must be maintained that provide for the 25 per cent. or more of recoverable cases in which illness lasts more than a year. 5. Adequate provisions must be made to become thoroughly acquainted with the outside conditions under which the disorder developed, and with the possibilities of an adjustment before the patient returns, so that such help or guidance as may be advantageous to the patient and to his friends on his return from the hospital may be extended. 6. General organizations of work must be carried out in the locality, according to its needs, among the various types of the community, not only with regard to checking alcoholism and the spread of syphilis, but also with regard to hygienic methods of living generally; emphasis must be laid on keeping the minds balanced with a due share of recreation and rest, and satisfaction with the returns of every-day toil.

Ocular Manifestations of Hysteria.—C. E. Finlay of Havana contributes an article to the *Revista de Med. y Cirugia*, May 10, protesting against the prevalent disregard of the ocular manifestations of hysteria. It is probably, he says, the reaction from the excessive importance ascribed to the ocular manifestations by the clinicians of the Paris Salpêtrière school. He states that he has encountered six typical cases among 13,000 patients, and describes these six cases in detail. In none were there any pupil phenomena. The first patient was a man of 33 with amblyopia without ocular lesions, concentric contraction of the visual field and incomplete color blindness. He had had a similar attack of amblyopia a year before. The functioning of the eye soon returned to normal under a course of tonics, except that the contracted visual field and dyschromatopsia persisted for several months. The second patient was a boy of 12 presenting concentric contraction of the visual field and other signs of hysterotraumatism following a severe blow in the left temple. The third patient was a young physician with diplopia; powerful iodid treatment had been pushed on the assumption of possible syphilis. Paralysis of both internal recti seemed the only diagnosis until the concentric contraction of the visual field and partial color blindness revealed the hysteric origin of the trouble. The patient refused to accept this diagnosis but suspended treatment and recovery soon followed. Another patient was a young man with one useless eye. The other eye was normal except for hypermetropia, but it was hit with a snowball and he had to stay in his room for two months, after which vision in this eye was much reduced. The visual field was concentrically contracted and there was partial color blindness, but the amblyopia rapidly subsided under rest, bromids and tonics. His two other patients were a woman of 27 and a girl of 11, both with the bilateral concentrically contracted visual field; the girl presented also monocular polyopia and nystagmus.

Maydl's Operation for Exstrophy of the Bladder.—J. Jellinek of Brünn, Austria, reviews the experiences of the last fifteen years with Maydl's operation for exstrophy of the bladder. He tabulates the details of 177 cases as reported by 92 different surgeons—including a number of Americans—and answers the objections that have been made to the Maydl technic. None of them has any weight, he shows, except the possibility of ascending infection, and this is counterbalanced by the superior functional results, the high mortality of the non-operated from pyelonephritis or malignant tumors which seem to display a predilection for the exposed bladder mucosa, and by the large number of permanently cured patients. The records show 17 cured for over 2 years; 13 for over 3; 7 for over 4; 25 for from 5 to 9 years, and 1 each for 10, 11 and 12 years. The age at which the operation is performed is an important factor in the outcome; the mortality under 5 was 41 per cent.; between 6 and 10, 18 per cent.; between 11 and 20, 32:5 per cent.; between 21 and 25, 50 per cent., and above this age, 72 per cent. The mortality from pyelonephritis also increased with age, from 3 and 9 per cent. under 15 to 54 per cent. after the age of 25. Sooner or later, 25 per cent. of the patients who had been operated on succumbed to this. Careful selection of the cases for operative treatment and improved technic in means to keep the urine and stools separate will make the outcome still better. The illustrated monograph appeared originally in the *Casopis lekaru ceskych* not long ago. The various other methods for treatment of exstrophy of the bladder and the ultimate outcome are described and compared with the Maydl "derivation" technic. Only four of all the patients operated on were women, and none of the women operated on for exstrophy of the bladder conceived later, although in one case the Maydl operation had been done for a tuberculous bladder affection and the girl married and bore a child later. There are 10 cases on record, he says, of pregnancy in women with exstrophy of the bladder, unoperated; as a rule, there are usually other malformations which interfere with conception.

Changes in the Duodenal Glands of the Rabbit After Ligation of the Duct of Wirsung.—A Marassini, in his reported experiments (*Arch. ital. de biol.*, 1909, xlix, 1) paid particular attention to those glands of the normal duodenum which bear a resemblance to the acini of the pancreas and which are known as the pancreas duodenalis. Marassini observed that within fifteen days after ligature of the pancreatic duct, there appeared in the submucosa of the duodenum a definite layer of tubuli. These tubuli in the main were composed of cells with intensive staining protoplasm. The remaining tubuli with bright transparent elements were now comparatively few in number. In the normal animal the tubuli with clear transparent cells greatly preponderate over the tubuli with intensively staining cells. After ligation of the duct, however, the proportion of the two kinds of tubuli are just reversed. With high magnification the intensively staining pancreas-like tubuli are seen to be made up of pear-shaped cells which bear a remarkable resemblance to the cells of the pancreatic acini. The similarity is further made evident by the presence in the cells of the deeply staining tubuli of a great many fuchsin-staining granules. These granules are homologous to the zymogen granules (i. e., granules from which the various ferments of the pancreatic juice are directly formed) of the acinous cells of the pancreas, and in the experimental animals their number was very greatly increased in the cells of the pancreas duodenalis. It is believed that these tubules with deeply staining cells represent structures of a nature similar to that of the acini of the normal pancreas and that after ligation of the pancreatic duct they greatly increase in number and take over the function of secreting pancreatic ferments to such an extent that they entirely compensate for the loss of the pancreatic secretion by ligation.

Orthodontia.—The opinion that a revolution in dentistry is taking place with the development of orthodontia is expresssed by Dr. Richard Cole Newton in the *Popular Science Monthly*, July, 1909. He describes the results obtained by straightening teeth and securing their proper arrangement in the jaw as adding greatly to human beauty, health and efficiency. The position of the teeth is held to determine the shape of the jaws, so that a jaw ordinarily held to be indicative of degeneracy assumes a form characteristic of the highest human type if the teeth are properly manipulated at the proper time. The opinion that man is gradually evolving into a toothless animal is given little support by results secured by these modern artists of the human face. The evidence presented by Dr. Newton, especially that in pictorial form is very convincing and serves to emphasize the fact that dentistry is a specialty of medicine with which every physician should be more familiar. The family physician should recognize the importance of the preservation of the teeth and should extract one only for very good reasons. The relations of the teeth to good digestion are properly emphasized by Dr. Newton, but it may be well to suggest that as the majority of digestive complaints are of functional and even of psychic character it is not safe to conclude without sufficient investigation that a particular case of gastric trouble owes its origin to poor teeth. On the other hand, there is reason for the view that both the poor teeth and the dyspepsia depend on an underlying fault of the nervous system. This view is supported by the frequent presence of the changes in the skeleton which constitute the signs of Stiller's asthenia congenita. Orthodontia may restore the teeth and jaws to proper form, but it is hardly likely to remove the congenital degenerative tendencies which form the basis of modern neurasthenia.

The Pressor Principles of Placental Extracts.—An examination of the alcoholic extracts of the human placenta was undertaken by Otto Rosenheim (*Jour. Physiol.*, 1909, xxxviii, 339) with the view of isolating the active principles observed by Dixon and Taylor (*Brit. Med. Jour.*, 1907, ii, 1150) to produce on intravenous injection a rise of blood pressure and a contraction of the pregnant uterus, and to establish the identity or otherwise of the active principles of placental extract with those of adrenalin or similar substances. By none of the well-known methods used in isolating adrenalin was a product obtained which gave any of the reactions of adrenalin. Furthermore, when care was taken to prevent bacterial putrefaction, the pressor principles were absent from extracts of placentaa prepared by any one of half a dozen methods, including the method of Dixon and Taylor. Under all conditions which freely permit autolytic processes to go on, with precautions against bacterial infection, the active principles are not produced. The method of Dixon and Taylor permits of bacterial infection in which case the active pressor principles are present. Rosenheim concludes: "Fresh human placenta does not contain any pressor principle. The pressor principles of placental extracts, prepared according to Dixon and Taylor, are products of initial putrefaction. The autolytic enzymes of the placenta, without the help of micro-organisms, are unable to produce pressor substances. Several pressor bases were isolated from putrefying placenta, the most active of which was identified as p-hydroxyphenylethylamin, while the identity of another with isoamylamin is most probable. These are identical with those found by Barger and Walpole in putrid meat."

The Ideal Fly Killer.—Now that so much is being said about the necessity of extirpating house flies, a communication to *Nature* of May 13 is of interest. Dr. Alexander Hill, writing from Mentone, says that the most efficient fly destroyer with which he is acquainted is a dilute solution of formaldehyd. If two teaspoonfuls of formalin (40 per cent. formaldehyd) be added to a soup-plate filled with water, the flies go to it to drink, especially in the early afternoon. Some die in the water, others fall in the neighborhood of the plate, and others elsewhere in the room. With a single plate of the solution on the kitchen table, he says, hundreds of dead flies are daily swept up from the floor. He is writing from the south of France where screening does not seem to be so universal, or flies are especially abundant. It is somewhat strange, as he says, that so small a dose should prove fatal when taken into the fly's alimentary canal. To free a room of flies by vaporizing formalin the air would have to be rendered irrespirable by a human being. Formaldehyd in very dilute solution has no particular odor and he gives this fact of its deadliness to flies as an evidence that their olfactory sense must be very similar in this respect to our own. The solution neither attracts nor repels flies, for a similar plate containing only pure water will be equally visited by them. The formalin may be added to a dish of water containing flowers, if equally accessible to the flies, with the same result as far as fly killing is concerned; the plants are not affected other than as slightly in regard to their tints by the formalin. Though not specially intended as such the communication is very apropos as a sanitary item at the present time.

Tabes and Pregnancy.—MM. H. Dufour and Cottinot report (*Bull. et mém. Soc. méd. d. hôp. de Paris*, Feb. 5, 1909, p. 211) the case of a woman, aged 29, secundipara, and three months pregnant, who had never shown any signs of tabes (unless we consider excessive vomiting during her first pregnancy and on one other occasion to be of that nature), but who was suddenly taken with uncontrollable emesis. Examination revealed a number of tabetic symptoms, occurring all at once at this time. Previously the patient had considered herself in perfect health and had done her work. She was temperate and there had been no history or signs that could be referred to syphilitic infection. Neither she nor her husband could give any history of the pre-existence of the inco-ordination or other tabetic symptoms. One fact, however, that was learned is significant. In January, 1908, she had severe attacks of vomiting and a laparotomy was performed in the left iliac fossa, apparently on a diagnosis of bowel obstruction, which was not found and the wound was closed and she recovered. It is more than probable that this was a simple gastric crisis of tabes, but it suggests an important practical point in the diagnosis. The excessive reaction of pregnancy on tabes is, however, the chief thing of interest in the case. Another similar case is briefly mentioned and reference is made to still others reported by Heitz and others in which the symptoms of tabes were aggravated by pregnancy. Mercurial injections brought the first patient reported by the authors to term.

Fixation Abscesses in Treatment of Lead Poisoning.—J. Carles of Bordeaux has been conducting experimental research, the results being confirmed by clinical experience, which reaffirms the way in which metallic salts circulating in the organism are attracted to an inflammatory focus and are eliminated in the pus. In some of the dogs injected with turpentine after chronic lead poisoning to cause the "fixation abscess," the pus contained a larger proportion of lead than could be found in equal weights of brain or liver tissue. The turpentine was not injected until after the lead had been deposited in the viscera, the experiences showing that the leucocytes were able to recapture the lead and transport it to the fixation abscess; the kidneys and blood contained only traces, while 25 gm. of pus contained 0.003 gm. of lead sulphid. In the two clinical cases related in his communication in the *Bull. Gén. de Thérapeutique*, Feb. 8, 1909, the pus did not contain a very large proportion of lead, but every little may help in the serious cases, he says.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF LEAD POISONING

To the Editor:—I wish to know the best treatment for plumbism, such as is found around a lead smelter and in lead mines; especially for a patient who has gone from 3 to 6 days without a bowel movement. I have a smelter company's practice, and have from 10 to 100 cases a month. I have never been able to find any work on it in English.

J. M. SPAULDING, M.D., Silver City, Utah.

ANSWER.—The treatment of lead poisoning includes the prevention of further poisoning by removal of the cause; especial care should be taken to secure cleanliness and especially to prevent eating with soiled hands. The elimination of the poison is favored by copious ingestion of water, warm baths, and the administration of potassium iodid in doses of 0.3 gm. (5 grains) three times a day.

The symptoms must be treated as they arise. Constipation should be relieved by the milder laxatives, such as magnesium sulphate, senna, etc., if possible. Sometimes more active cathartics must be given. For paralysis full doses of strychnin simultaneously with large doses of potassium iodid must be given. The faradic current is useful in paralysis of the extremities. Colic should be relieved by morphin hypodermically. This sometimes relieves the constipation at the same time.

In the report of the Committee on Social Betterment of the President's Homes Commission, Dr. William J. Manning's article on "Plumbism" is reproduced. In this article Dr. Manning says: "In acute cases of lead poisoning the treatment consists in the administration of alkaline carbonates, soap, soluble sulphates, sodium chlorid, etc., washing out the stomach with large drafts of water, etc. Alum has been given, and at one time was considered almost a specific. Sweet oil and castor oil will be found useful. Milk should be taken in large quantities. The idea is first to combat the symptoms and then to eliminate the lead. Opium can be given for pain. Warm sulphureted baths are very beneficial. They can be made by dissolving 4 ounces of potassium sulphid in 30 gallons of water in a wooden tub. These baths discolor the skin from the formation of lead sulphid, and should be repeated every few days until this effect ceases. During each bath the patient should be well washed with soap and water to remove discoloration."

In Great Britain dangerous trades are regulated by special provisions in the factory and workshop act. Under the head of "Lead Smelting Works," the following duties of employers are prescribed:

"*Duties of Occupiers:* (1) They shall provide respirators and overall suits for the use of all persons employed in cleaning the flues, and take means to see that the same are used. (2) They shall arrange that no person be allowed to remain at work more than two hours at a time in a flue—a rest of half an hour before re-entering will be deemed sufficient. (3) They shall provide sufficient bath accommodation for all persons employed in cleaning the flues, and every one so employed shall take a bath before leaving the works. (4) They shall provide washing conveniences, with sufficient supply of hot and cold water, soap, nail-brushes and towels."

To insure the carrying out of these rules, the workmen are held liable should they fail to comply with them, a fine not exceeding two pounds ($10) being imposed. Since the enforcement of these preventive measures there has been in England a most marked reduction in the morbidity and mortality from lead poisoning.

A work that might be of interest to our correspondent is "Lead Poisoning," by Thomas Oliver, published by Young J. Pentland, Edinburgh.

SHAMPOO FORMULAS

To the Editor:—Will you kindly tell me what is a good formula for a shampoo, and what other soft soap besides green soap is on the market? How are these liquid soaps made? Are they merely boiled, dilute green or soft soap?

ENQUIRER, Chicago.

ANSWER.—While many proprietary soft soaps and prepared shampoos are for sale, none is superior to the official soft soap (Sapo Mollis U. S. P.) in convenience or effectiveness. This may be found stronger than is desired and will be too harsh on the hair in some cases. A good castile soap may be made soft by being cut up and boiled with a little water. For convenience a solution of soft soap in alcohol to which a little oil of bergamot or other essential oil has been added is often used. The National centric contraction of the visual field and incomplete color blindness. He had had a similar attack of amblyopia a year before. The functioning of the eye soon returned to normal under a course of tonics, except that the contracted visual field and dyschromatopsia persisted for several months. The second patient was a boy of 12 presenting concentric contraction of the visual field and other signs of hysterotraumatism following a severe blow in the left temple. The third patient was a young physician with diplopia; powerful iodid treatment had been pushed on the assumption of possible syphilis. Paralysis of both internal recti seemed the only diagnosis until the concentric contraction of the visual field and partial color blindness revealed the hysteric origin of the trouble. The patient refused to accept this diagnosis but suspended treatment and recovery soon followed. Another patient was a young man with one useless eye. The other eye was normal except for hypermetropia, but it was hit with a snowball and he had to stay in his room for two months, after which vision in this eye was much reduced. The visual field was concentrically contracted and there was partial color blindness, but the amblyopia rapidly subsided under rest, bromids and tonics. His two other patients were a woman of 27 and a girl of 11, both with the bilateral concentrically contracted visual field; the girl presented also monocular polyopia and nystagmus.

Maydl's Operation for Exstrophy of the Bladder.—J. Jellinek of Brünn, Austria, reviews the experiences of the last fifteen years with Maydl's operation for exstrophy of the bladder. He tabulates the details of 177 cases as reported by 92 different surgeons—including a number of Americans—and answers the objections that have been made to the Maydl technic. None of them has any weight, he shows, except the possibility of ascending infection, and this is counterbalanced by the superior functional results, the high mortality of the non-operated from pyelonephritis or malignant tumors which seem to display a predilection for the exposed bladder mucosa, and by the large number of permanently cured patients. The records show 17 cured for over 2 years; 13 for over 3; 7 for over 4; 25 for from 5 to 9 years, and 1 each for 10, 11 and 12 years. The age at which the operation is performed is an important factor in the outcome; the mortality under 5 was 41 per cent.; between 6 and 10, 18 per cent.; between 11 and 20, 32:5 per cent.; between 21 and 25, 50 per cent., and above this age, 72 per cent. The mortality from pyelonephritis also increased with age, from 3 and 9 per cent. under 15 to 54 per cent. after the age of 25. Sooner or later, 25 per cent. of the patients who had been operated on succumbed to this. Careful selection of the cases for operative treatment and improved technic in means to keep the urine and stools separate will make the outcome still better. The illustrated monograph appeared originally in the *Casopis lekaru ceskych* not long ago. The various other methods for treatment of exstrophy of the bladder and the ultimate outcome are described and compared with the Maydl "derivation" technic. Only four of all the patients operated on were women, and none of the women operated on for exstrophy of the bladder conceived later, although in one case the Maydl operation had been done for a tuberculous bladder affection and the girl married and bore a child later. There are 10 cases on record, he says, of pregnancy in women with exstrophy of the bladder, unoperated; as a rule, there are usually other malformations which interfere with conception.

Changes in the Duodenal Glands of the Rabbit After Ligation of the Duct of Wirsung.—A Marassini, in his reported experiments (*Arch. ital. de biol.*, 1909, xlix, 1) paid particular attention to those glands of the normal duodenum which bear a resemblance to the acini of the pancreas and which are known as the pancreas duodenalis. Marassini observed that within fifteen days after ligature of the pancreatic duct, there appeared in the submucosa of the duodenum a definite layer of tubuli. These tubuli in the main were composed of cells with intensive staining protoplasm. The remaining tubuli with bright transparent elements were now comparatively few in number. In the normal animal the tubuli with clear transparent cells greatly preponderate over the tubuli with intensively staining cells. After ligation of the duct, however, the proportion of the two kinds of tubuli are just reversed. With high magnification the intensively staining pancreas-like tubuli are seen to be made up of pear-shaped cells which bear a remarkable resemblance to the cells of the pancreatic acini. The similarity is further made evident by the presence in the cells of the deeply staining tubuli of a great many fuchsin-staining granules. These granules are homologous to the zymogen granules (i. e., granules from which the various ferments of the pancreatic juice are directly formed) of the acinous cells of the pancreas, and in the experimental animals their number was very greatly increased in the cells of the pancreas duodenalis. It is believed that these tubules with deeply staining cells represent structures of a nature similar to that of the acini of the normal pancreas and that after ligation of the pancreatic duct they greatly increase in number and take over the function of secreting pancreatic ferments to such an extent that they entirely compensate for the loss of the pancreatic secretion by ligation.

Orthodontia.—The opinion that a revolution in dentistry is taking place with the development of orthodontia is expresssed by Dr. Richard Cole Newton in the *Popular Science Monthly*, July, 1909. He describes the results obtained by straightening teeth and securing their proper arrangement in the jaw as adding greatly to human beauty, health and efficiency. The position of the teeth is held to determine the shape of the jaws, so that a jaw ordinarily held to be indicative of degeneracy assumes a form characteristic of the highest human type if the teeth are properly manipulated at the proper time. The opinion that man is gradually evolving into a toothless animal is given little support by results secured by these modern artists of the human face. The evidence presented by Dr. Newton, especially that in pictorial form is very convincing and serves to emphasize the fact that dentistry is a specialty of medicine with which every physician should be more familiar. The family physician should recognize the importance of the preservation of the teeth and should extract one only for very good reasons. The relations of the teeth to good digestion are properly emphasized by Dr. Newton, but it may be well to suggest that as the majority of digestive complaints are of functional and even of psychic character it is not safe to conclude without sufficient investigation that a particular case of gastric trouble owes its origin to poor teeth. On the other hand, there is reason for the view that both the poor teeth and the dyspepsia depend on an underlying fault of the nervous system. This view is supported by the frequent presence of the changes in the skeleton which constitute the signs of Stiller's asthenia congenita. Orthodontia may restore the teeth and jaws to proper form, but it is hardly likely to remove the congenital degenerative tendencies which form the basis of modern neurasthenia.

The Pressor Principles of Placental Extracts.—An examination of the alcoholic extracts of the human placenta was undertaken by Otto Rosenheim (*Jour. Physiol.*, 1909, xxxviii, 339) with the view of isolating the active principles observed by Dixon and Taylor (*Brit. Med. Jour.*, 1907, ii, 1150) to produce on intravenous injection a rise of blood pressure and a contraction of the pregnant uterus, and to establish the identity or otherwise of the active principles of placental extract with those of adrenalin or similar substances. By none of the well-known methods used in isolating adrenalin was a product obtained which gave any of the reactions of adrenalin. Furthermore, when care was taken to prevent bacterial putrefaction, the pressor principles were absent from extracts of placentaa prepared by any one of half a dozen methods, including the method of Dixon and Taylor. Under all conditions which freely permit autolytic processes to go on, with precautions against bacterial infection, the active principles are not produced. The method of Dixon and Taylor permits of bacterial infection in which case the active pressor principles are present. Rosenheim concludes: "Fresh human placenta does not contain any pressor principle. The pressor principles of placental extracts, prepared according to Dixon and Taylor, are products of initial putrefaction. The autolytic enzymes of the placenta, without the help of micro-organisms, are unable to produce pressor substances. Several pressor bases were isolated from putrefying placenta, the most active of which was identified as p-hydroxyphenylethylamin, while the identity of another with isoamylamin is most probable. These are identical with those found by Barger and Walpole in putrid meat."

The Ideal Fly Killer.—Now that so much is being said about the necessity of extirpating house flies, a communication to *Nature* of May 13 is of interest. Dr. Alexander Hill, writing from Mentone, says that the most efficient fly destroyer with which he is acquainted is a dilute solution of formaldehyd. If two teaspoonfuls of formalin (40 per cent. formaldehyd) be added to a soup-plate filled with water, the flies go to it to drink, especially in the early afternoon. Some die in the water, others fall in the neighborhood of the plate, and others elsewhere in the room. With a single plate of the solution on the kitchen table, he says, hundreds of dead flies are daily swept up from the floor. He is writing from the south of France where screening does not seem to be so universal, or flies are especially abundant. It is somewhat strange, as he says, that so small a dose should prove fatal when taken into the fly's alimentary canal. To free a room of flies by vaporizing formalin the air would have to be rendered irrespirable by a human being. Formaldehyd in very dilute solution has no particular odor and he gives this fact of its deadliness to flies as an evidence that their olfactory sense must be very similar in this respect to our own. The solution neither attracts nor repels flies, for a similar plate containing only pure water will be equally visited by them. The formalin may be added to a dish of water containing flowers, if equally accessible to the flies, with the same result as far as fly killing is concerned; the plants are not affected other than as slightly in regard to their tints by the formalin. Though not specially intended as such the communication is very apropos as a sanitary item at the present time.

Tabes and Pregnancy.—MM. H. Dufour and Cottinot report (*Bull. et mém. Soc. méd. d. hôp. de Paris*, Feb. 5, 1909, p. 211) the case of a woman, aged 29, secundipara, and three months pregnant, who had never shown any signs of tabes (unless we consider excessive vomiting during her first pregnancy and on one other occasion to be of that nature), but who was suddenly taken with uncontrollable emesis. Examination revealed a number of tabetic symptoms, occurring all at once at this time. Previously the patient had considered herself in perfect health and had done her work. She was temperate and there had been no history or signs that could be referred to syphilitic infection. Neither she nor her husband could give any history of the pre-existence of the inco-ordination or other tabetic symptoms. One fact, however, that was learned is significant. In January, 1908, she had severe attacks of vomiting and a laparotomy was performed in the left iliac fossa, apparently on a diagnosis of bowel obstruction, which was not found and the wound was closed and she recovered. It is more than probable that this was a simple gastric crisis of tabes, but it suggests an important practical point in the diagnosis. The excessive reaction of pregnancy on tabes is, however, the chief thing of interest in the case. Another similar case is briefly mentioned and reference is made to still others reported by Heitz and others in which the symptoms of tabes were aggravated by pregnancy. Mercurial injections brought the first patient reported by the authors to term.

Fixation Abscesses in Treatment of Lead Poisoning.—J. Carles of Bordeaux has been conducting experimental research, the results being confirmed by clinical experience, which reaffirms the way in which metallic salts circulating in the organism are attracted to an inflammatory focus and are eliminated in the pus. In some of the dogs injected with turpentine after chronic lead poisoning to cause the "fixation abscess," the pus contained a larger proportion of lead than could be found in equal weights of brain or liver tissue. The turpentine was not injected until after the lead had been deposited in the viscera, the experiences showing that the leucocytes were able to recapture the lead and transport it to the fixation abscess; the kidneys and blood contained only traces, while 25 gm. of pus contained 0.003 gm. of lead sulphid. In the two clinical cases related in his communication in the *Bull. Gén. de Thérapeutique*, Feb. 8, 1909, the pus did not contain a very large proportion of lead, but every little may help in the serious cases, he says.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TREATMENT OF LEAD POISONING

To the Editor:—I wish to know the best treatment for plumbism, such as is found around a lead smelter and in lead mines; especially for a patient who has gone from 3 to 6 days without a bowel movement. I have a smelter company's practice, and have from 10 to 100 cases a month. I have never been able to find any work on it in English.

J. M. SPAULDING, M.D., Silver City, Utah.

ANSWER.—The treatment of lead poisoning includes the prevention of further poisoning by removal of the cause; especial care should be taken to secure cleanliness and especially to prevent eating with soiled hands. The elimination of the poison is favored by copious ingestion of water, warm baths, and the administration of potassium iodid in doses of 0.3 gm. (5 grains) three times a day.

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ANSWER.—While many proprietary soft soaps and prepared shampoos are for sale, none is superior to the official soft soap (Sapo Mollis U. S. P.) in convenience or effectiveness. This may be found stronger than is desired and will be too harsh on the hair in some cases. A good castile soap may be made soft by being cut up and boiled with a little water. For convenience a solution of soft soap in alcohol to which a little oil of bergamot or other essential oil has been added is often used. The National

Formulary contains a Compound Tincture of Green Soap, which consists of soft soap 150 gm., oil of cade 20 c.c. and alcohol enough to make 1,000 c.c. The official soft soap is made by treating linseed oil with an excess of potassium hydroxid and small quantities of alcohol and water are added to aid in the saponification. The various preparations of liquid soap which are found on the market differ chiefly from the official soft soap in that other oils than linseed oil may have been used in their preparation and also in the varying alcohol and water content.

The following formulas of liquid egg shampoos were given in the Therapeutic Department of The Journal March 14, 1908; they are both from the *Druggists Circular:*

Soft soap	2 ounces
Whites of	4 eggs
Potassium carbonate	1 ounce
Tar water	1 pint
Glycerin	2 ounces
Orange flower water, enough to make	2 ounces

Beat the whites of the eggs into a froth while gradually adding the tar water. Dissolve the soap in a mixture of glycerin and six ounces of orange flower water. Mix the two solutions and make up to two pints with orange flower water.

Also:

Transparent soap	4 ounces
Glycerin	2 ounces
Whites of	3 eggs
Tincture of green soap	1 ounce.
Oil of rosemary	45 minims
Oil of rose geranium	30 minims
Water, enough to make	2 pints

Melt the soap in twelve ounces of water, add the glycerin and stir until cool; then add the green soap and the oils. Mix the whites of the eggs with eight ounces of water and stir into the soap mixture. Shake well, let stand for twenty-four hours, and strain through flannel.

BUTTERMILK THERAPY AND MILKS AS FOOD

To the Editor:—In your excellent editorial on buttermilk therapy occurs the sentence, "it is not likely that any one would live on such a diet except for experimental purposes." Now so far as I know every pastoral people compelled to use milk largely as a diet does ferment its milk by some complicated process. This is so unlikely to happen that it demands consideration. I would be glad to know if there is any exception to it, or if you can suggest any explanation other than the evolutionary one, i. e., that every race that has tried to live on sweet milk has died out. Clinical experience has inclined me to the theory that intestinal toxemia is more likely to occur from sweet milk than from sour. I make my sour milk, by the way, with hydrochloric acid rather than with a ferment. I am of course aware of the unreliability of clinical impression and agree that the theory should be tested in every way before it is stated as a fact. But the extensive use of ferments among semicivilized people seems to me an item of evidence which should be considered.

John W. Boyce, M.D., Pittsburg.

Answer.—To the great majority of adults, sweet milk becomes peculiarly, often unbearably, distasteful when taken in amounts that anywhere nearly represent a sufficient exclusive diet. It hardly seems probable that any race has even "tried to live on sweet milk" alone, or even approximately so. Furthermore, milk of any kind or any preparation of it is at best a poor food as an exclusive diet for anything but an infant. We know very well, clinically, that babies a year or more old will become pale and flabby when fed on milk alone, possibly largely because, as Bunge has pointed out, milk in itself contains too little iron. There are other familiar objections to a sole milk diet.

Some of the fermented milks, notably koumiss, contain considerable quantities of alcohol and all of them have a decided taste. It would seem more probable that the reason fermented milks are used so freely among pastoral peoples would be that they have an acquired taste for it as a beverage, as some persons have for coffee, tea or beer, rather than that they ascribe superior nutritive or life-prolonging virtues to it as compared with sweet milk. There is a good deal of attractive theory but not a great amount of well-established fact concerning the effect of fermented milk in "intestinal toxemias," prolongation of life, etc. It has, for example, by no means been established that the striking results of buttermilk feeding in infancy are due to the presence of either the germs or the lactic acid, and not to the fact that a fat-free milk is being used.

TREATMENT OF COATED TONGUE

To the Editor:—What will clean up a persistently furred or coated tongue, one that stays coated all the time, is broad, flabby and moist, with a bad taste in the mouth every day in the year? What is the cause of this? Hepatic stimulants, tincture of nux vomica, hydrochloric acid and Canadian hemp do very little good. I should like to hear from some who have had success in such cases.

S. A. C., Virginia.

Answer.—Without more particulars it is hard to suggest a diagnosis, but some general rules may be given. Various explanations have been given of the coating on the tongue. The chief are: 1. The tongue is a part of the cutaneous system and is affected like the skin by general diseases, so that the coating is similar to an eruption of the skin. In such cases the eruption often persists after the disease which caused it has passed away. 2. The coating on the tongue may be due to local disorders of the teeth, oral mucous membrane, throat or nose. 3. The coating may rarely be due to some disease of the stomach but as a rule there is no direct relation between disease of the stomach and the fur on the tongue. 4. The coating on the tongue seems frequently to be related to the condition of the bowels, being probably the expression of a general poisoning resulting from the absorption of products of putrefaction by the intestinal mucous membrane.

In our correspondent's case he will need to seek out the cause. An examination of the stomach contents should be made, as the cause may lie in the stomach. If local disease is present it should be treated. Intestinal putrefaction should be prevented by the reduction or removal of protein, especially meat, from the diet, by the use of carbohydrate food, such as bread, corn-starch, cereals, etc., and by the use of laxatives, buttermilk, and if necessary intestinal antiseptics (phenylis salicylas). Locally the tongue should be cleaned with the tooth brush, and the use of an alkaline liquid like the liquor antisepticus alkalinus will facilitate the removal of mucus.

CUMULATIVE EFFECTS OF SUPRARENAL EXTRACT

In The Journal for July 31, 1909, a query was answered regarding the "Cumulative Effects of Suprarenal Extract." Further investigation of the subject has furnished the following additional data: Bouchard and Claude, 1902, experimented with a small number of rabbits, finding that they usually died from injections of 1 to 2 mg. per kilo, but if sublethal doses were first injected, as much as 4 mg. per kilo could be withstood by the animal. Abderhalden and Thies injected white mice with dextrosynthetic adrenalin, finding that it produced a resistance to doses of l-adrenalin 4 to 6 times that of the dose usually lethal.

Schultz of the Hygienic Laboratory of the Public Health and Marine-Hospital Service gives data in a bulletin entitled "Quantitative Pharmacological Studies. Adrenalin and Adrenalin-like Bodies," which indicate that small doses increase the animal's tolerance for subsequent doses of adrenalin. It is well known that small quantities of adrenalin sufficient to cause a rise in blood pressure have but a transient effect and do not influence the effect of subsequent doses if the latter are injected a few minutes after the return of the blood pressure to normal. It would seem from such data that initial injections of adrenalin either do not influence the effects of subsequent injections, or when they do so they render the animal more tolerant to its toxic action.

The Public Service

Medical Corps of the Navy

Changes for the week ended Aug. 7, 1909:

Minter, J. M., asst.-surgeon, ordered to the Naval Recruiting Station, Pittsburg, Pa.

Harlan, T., asst.-surgeon, detached from the Naval Recruiting Station, Pittsburg, Pa., and ordered to the Naval Hospital, Mare Island, Cal.

Harlan, T., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and ordered to the Asiatic Station, via the Naval Recruiting Station, Oklahoma City, Okla., and ordered home to wait orders.

Donelson, M., asst.-surgeon, detached from temporary duty in the Bureau of Medicine and Surgery, Navy Department, and ordered to the Naval Recruiting Station, Oklahoma City, Okla.

McMullin, J. J., acting asst.-surgeon, ordered to the Naval Hospital, Narragansett Bay, R. I

Murphy, J. F., P. A. surgeon, ordered to the Naval Hospital, Las Animas, Colo.

Wilson, H. D., surgeon, detached from the *Kentucky* and ordered to resume other duties.

Shaw, H., P. A. surgeon, detached from the Naval Station, Culebra, W. I., and ordered to the Navy Yard, Washington, D. C.

Rodman, S. S., P. A. surgeon, orders of July 27, detaching from the Naval Recruiting Station, Indianapolis, and ordering to the Naval Recruiting Station, Boston, *revoked*.

Stalnaker, P. R., P. A. surgeon, detached from the Navy Yard, Washington, D. C., August 10, and ordered to the Naval Station, Culebra, W. I.

Curtis, L. W., medical inspector, commissioned medical inspector from July 1, 1909.

Rodman, S. S., P. A. surgeon, detached from the Naval Recruiting Station, Indianapolis, and granted leave until September 25.

Eytinge, E. O. J., P. A. surgeon, commissioned passed assistant surgeon from May 24, 1908.

Munger, C. B., P. A. surgeon, commissioned passed assistant surgeon from July 7, 1908.

Medical Department of the Army

Changes for the week ended Aug. 7, 1909:

Connor, Clarence H., capt., granted leave of absence for four months, when relieved from duty in the Philippine Division; may return to the United States via Europe.

Miller, Edgar W., capt., granted leave of absence for 7 days.

Nichols, Henry J., 1st lieut., ordered to report at San Francisco, for examination for promotion, on completion and expiration of leave of absence, will proceed to New York City for duty as Attending Surgeon.

Persons, Elbert E., major, in addition to present duties, temporarily assigned as assistant to Chief Surgeon, Department of the East, and attending surgeon, headquarters, Department of the East.

Collins, Christopher C., major, granted leave of absence for four months.

Barber, John R., 1st lieut., relieved from duty at the Army Medical Museum, Washington, D. C., in time to proceed to San Francisco, and sail Oct. 5 for Philippines service; granted leave of absence for one month.

Purviance, William E., major, granted leave of absence for 25 days.

Woolley, Herbert C., 1st lieut., M. R. C., relieved from duty at Fort Davis, Alaska; will proceed home and then stand relieved from active duty in the Medical Reserve Corps.

Buchsbaum, Maurice, 1st lieut., M. R. C., relieved from duty at Fort D. A. Russell, Wyo., in time to proceed to San Francisco, and sail Sept. 5 for Philippine service.

Coffin, Harold L., 1st lieut., M. R. C., granted an extension of one month to his leave of absence.

Ware, William H., dental surgeon, ordered to Vancouver Barracks, Wash., for duty, at the expiration of his present leave of absence.

Boak, S. Davis, dental surgeon, relieved from duty at Vancouver Barracks, Wash., and [illegible] al., for duty.

Lauderdale, Clarenc[illegible] d to visit in succession for temporary [illegible] z., Whipple Barracks, Ariz., Fort Apa[illegible] N. M., returning then to Fort Logan, Colo.

Casaday, George H., dental surgeon, ordered from Fort Shafter, H. T., to the Presidio of Monterey, Cal., for temporary duty.

Public Health and Marine-Hospital Service

List of changes for the seven days ended August 4, 1909:

Bailhache, Preston H., surgeon, placed on "waiting orders" from November 1, 1909.

Banks, Charles E., surgeon, on being relieved by Surgeon E. K. Sprague, directed to proceed to Portland, Me., and assume command.

Kalloch, P. C., surgeon, on being relieved by Surgeon Charles E. Banks, directed to proceed to Memphis, Tenn., and assume command.

Wasdin, Eugene, surgeon, on arrival of Surgeon P. C. Kalloch, relieved from duty at Memphis, Tenn.

Brown, B. W., surgeon, granted a five days' leave of absence from July 29, 1909.

Brown, B. W., surgeon, on being relieved by P. A. Surgeon R. H. Creel, directed to proceed to Vineyard Haven, Mass., and assume command.

Sprague, E. K., surgeon, on being relieved by Asst.-Surgeon W. M. Bryan, directed to proceed to Key West, Fla., and assume command.

Lavinder, C. H., P. A. surgeon, granted 14 days' leave of absence from August 1, 1909.

Foster, M. H., P. A. surgeon, granted 1 day's leave of absence, July 27, 1909, on account of sickness.

Warren, B. S., P. A. surgeon, granted 14 days' leave of absence from August 1, 1909.

Creel, R. H., P. A. surgeon, on the arrival of Asst.-Surgeon James P. Leake, directed to proceed to Louisville, Ky., and assume temporary command.

Ashford, F. A., asst.-surgeon, directed to proceed to Washington, D. C., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of Passed Assistant Surgeon.

Herring, R. A., asst.-surgeon, leave of absence granted May 20, 1909, for 1 month and 4 days from June 5, 1909, amended to read 1 month and 6 days from June 5, 1909.

Bryan, William M., asst.-surgeon, relieved from duty at South Atlantic Quarantine Station, and directed to proceed to Southport, N. C., and assume command of the Cape Fear Quarantine Station.

Hasseltine, Hermon E., asst.-surgeon, directed to proceed to Buffalo, N. Y., and report to the medical officer in charge for duty.

Hunter, W. R., acting asst.-surgeon, granted 2 days' leave of absence from August 5, 1909.

Knight, Carlisle P., acting asst.-surgeon, granted 30 days' leave of absence from October 1, 1909.

Porter, Joseph Y., Jr., acting asst.-surgeon, granted 30 days' leave of absence from August 4, 1909, without pay.

Richter, H. C., acting asst.-surgeon, granted 15 days' leave of absence from July 29, 1909.

Story, H. C., acting asst.-surgeon, granted 30 days' leave of absence from September 1, 1909.

Weeks, Alanson, acting asst.-surgeon, leave of absence granted July 9, 1909, for 30 days from July 10, 1909, amended to read 30 days from July 19, 1909.

BOARD CONVENED

Board of medical officers convened to meet at the Bureau, August 5, 1909, for the examination of Asst.-Surgeon F. A. Ashford to determine his fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Asst.-Surgeon-General J. W. Kerr, chairman; Surgeon W. P. McIntosh; P. A. Surgeon J. F. Anderson, recorder.

Health Reports

The following cases and deaths of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 6, 1909:

SMALLPOX—UNITED STATES

Illinois: Danville, July 18-25, 2 cases.
Indiana: Fort Wayne, July 10-17, 3 cases.
Kansas: Kansas City, July 10-17, 1 case.
Kentucky: Lexington, July 17-24, 1 case; Newport, July 18-25, 1 case.
Louisiana: New Orleans, July 17-24, 1 case.
Michigan: Detroit, July 17-24, 1 case; Kalamazoo, 1 case.
Minnesota: Duluth, July 17-23, 3 case.
Missouri: St. Louis, July 17-24, 1 case.
Montana: Butte, July 15-22, 3 cases.
Ohio: Dayton, July 17-24, 1 case.

SMALLPOX—INSULAR

Philippine Islands: Manila, July 5-12, 1 case, 1 death.

SMALLPOX—FOREIGN

Algeria: Algiers, June 1-30, 2 deaths.
Brazil: Rio de Janeiro, June 13-27, 3 cases, 5 deaths.
Canada: Halifax, July 10-17, 2 cases.
China: Amoy, June 12-26, 19 deaths.
Egypt: Cairo, June 10-24, 3 cases, 1 death.
India: Calcutta, June 12-19, 7 deaths; Madras, June 19-25, 1 death; Rangoon, June 12-19, 3 deaths.
Indo-China: Saigon, May 29-June 12, 4 cases, 3 deaths.
Italy: Naples, June 4-11, 29 cases, 8 deaths.
Java: Batavia, June 5-19, 3 cases.
Mexico: Mexico City, May 29-June 26, 43 deaths; Monterey; June 11-18, 3 deaths.
Portugal: Lisbon, July 4-18, 22 cases.
Russia: Libau, July 3-10, 1 case, 1 death; Riga, 6 deaths; St. Petersburg, May 8-15, 20 cases, 5 deaths, June 19-July 3, 34 cases, 8 deaths.
Spain: Barcelona, July 5-12, 4 deaths; Vigo, July 3-10, 1 death.
Turkey: Constantinople, June 27-July 4, 1 case; Smyrna, May 27-July 1, 13 deaths.

YELLOW FEVER

Ecuador: Guayaquil, June 12-26, 9 deaths.

CHOLERA—INSULAR

Philippine Islands: Provinces, June 5-12, 77 cases, 52 deaths.

CHOLERA—FOREIGN

China: Amoy and vicinity, June 12-26, 3 cases, 7 deaths.
India: Calcutta, June 12-19, 23 cases; Madras, June 19-25, 1 death; Rangoon, June 12-19, 3 deaths.
Indo-China: Saigon, May 29-June 12, 5 cases, 2 deaths.
Russia: July 10-17, 1,020 cases, 421 deaths; St. Petersburg, 844 cases, 341 deaths.

PLAGUE—UNITED STATES

California: Alameda County, Sunol, Aug. 2, 1 case.

PLAGUE—FOREIGN

Chile: Antofagasta, June 26, 2 cases in lazaretto; Iquique, June 30, 2 cases in lazaretto.
China: Amoy, June 12-26, 210 deaths; Canton, July 5-19, 30 deaths.
Ecuador: Guayaquil, June 12-26, 9 deaths.
India: General, June 12-19, 885 cases, 766 deaths; Calcutta, 67 deaths; Rangoon, 36 deaths.
Indo-China: Saigon, May 29-June 12, 5 cases, 5 deaths.
Japan: Kobe, June 26-July 3, 1 case, 1 death; Yokahama, 5 cases, 1 death
Peru: June 26-July 3, 26 cases, 12 deaths.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of July, 1909:

ALABAMA

Farish, L. B., Atmore.

ARIZONA

Sloane, H. F., Courtland.
Troutman, G. D., Tucson.

ARKANSAS

Blue, Julian B., Parkin.
Thiolliere, A. C., Pleasant Plains.

CALIFORNIA

Chambers, W. E., Oakland.
Compton, G. W., San Diego.
Deininger, Marguerite, Pt. Richmond.
Haworth, M. W., Sacramento.
[illegible] Angeles.
[illegible] field.
[illegible]
[illegible] g Beach.
Williams, Edith H., San Francisco.
Wood, E. H., Riverside.

COLORADO

Adkinson, R. C., Florence.
Bowie, M. R., Paonia.
Burkhard, E. D., Ludlow.
Driscoll, W. E., Cripple Creek.
Hayes, A. L., Victor.
Krohn, M. J., Denver.
Van Norman, H. C., Denver.
Wallace, F. E., Pueblo.

CONNECTICUT

Bissell, Wm., Lakeville.
Bissell, Wm. B., Lakeville.
Bodley, G. H., New Britain.
Kingsbury, Wm. S., Glastonbury.
Noxon, G. H., Darien.
Patterson, D. C., Bridgeport.
Tracey, W. J., Norwalk.

FLORIDA

Newsom, Wm. V., Ocala.

GEORGIA

Denton, J. F., Atlanta.
Ellis, J. N., Atlanta.
Hurt, J. S., Atlanta.
White, J. C., Atlanta.

ILLINOIS

Aiken, A. W., Chicago.
Braude, Morris, Chicago.
Brewster, B. M., Fieldon.
Buckmaster, Frank, Effingham.
Burry, Jas., Chicago.
Diddy, L. C., Oswego.
Everett, E. A., Grantfork.
Gauss, J. H. P., Chicago.
Goldstine, Mark T., Chicago.
Harris, C. E., Chicago.
Howard, G. H., Chicago.
Jackson, Harry, Chicago.
Johnston, F., Milton.
Knox, O. M., Chicago.
Lewis, D. D., Chicago.
Lewis, E. J., Chicago.
Martin, F. H., Libertyville.
Matter, C. M., Chicago.
Metcalf, W. B., Chicago.
Ostling, C. A., Chicago.
Russell, S. J., Chicago.
Silcox, J. E. D., Rio.
Swift, G. W., Chicago.

INDIANA

McKee, H. N., Covington.
Molloy, W. J., Muncie.

IOWA

Agan, G. M., Silver City.
Allband, G. A., Elliott.
Arent, Asaph, Humboldt.
Baker, L. J., Ottumwa.

Brothers, H. N., Sioux City.
Brown, J. W., Clearfield.
Campbell, H. E., Anita.
Carpenter, Frank, Reasnor.
Cretzmeyer, O. H., Algona.
Gulde, W. C., Bancroft.
Hibbs, F. V., Lohrville.
Hillweg, C. H., Corning.
Hoover, C. E., Hamburg.
Jones, C. R., Lewis.
Kahler, H. V., Reinbeck.
Keoper, Paul, Baxter.
Lane, J. P., Cascade.
Leson, C. T., Mt. Ayr.
Lyon, W. E., Gardner Grove.
Maulsby, E. P., Casey.
McCue, J. G., Silver City.
Moon, Roy, Clarinda.
Moore, R. A., Silver City.
Parriott, C. C., Essex.
Piper, H. J., Randolph.
Reed, G. P., Davis City.
Reed, M. B., Cromwell.
Scales, H. W., Yorktown.
Scott, J. R., Malvern.
Stanley, H. M., Prescott.

KANSAS

Lockwood, C. H., Towanda.
Montzingo, E. R., Rock.

KENTUCKY

Roberts, J. D., Stanley.
Williamson, H. F., Paducah.

LOUISIANA

Daniel, A. A., Pitkin.

MAINE

Gould, A. L., Freeport.

MARYLAND

Higdon, T. L., Wayside.
Shipley, A. M., Baltimore.
Stubenrauch, C. H., Baltimore.

MASSACHUSETTS

Baker, L. F., Fitchburg.
Bergin, S. A., Worcester.
Burbeck, E. K., Salem.
Donnell, H. A., Medford.
Field, M. T., Salem.
Gahan, P. F., Medford.
Liverpool, C. H., Somerville.
Marshall, W. R., Lynn.

MICHIGAN

Bell, G. A., Saginaw.
Bower, C. T., Ransom.
Burns, G. G., Fremont.
Howland, F. A., Adrian.
Kloppenstein, W. [illegible]
Loranger, Philip, [illegible]
Mack, C. W., Pont [illegible]
Morey, C. W., Pt. Huron.
Van Camp, E., Athens.
Watkins, J. T., Detroit.
Webber, E. E., Marlette.

MINNESOTA

Buser, J. R., Mesaba.
Johnson, Julius, Minneapolis.
Kalinoff, Demeter, Stillwater.
Warren, J. W., Faribault.
Wilcox, A. E., Minneapolis.
Smith, N. M., Minneapolis.

MISSOURI

Dod, F. L., Kansas City.
Graul, J. D., St. Louis.
Kearney, E. F., New Point.
Robinson, E. E., Adrian.
Scott, C. D., St. Louis.
Hanna, M. A., Kansas City.

NEBRASKA

Baldwin, F. J., Merriman.
Dunn, Mabel, Lincoln.
Egloff, G. E., Saronville.
Hedlund, A. E., Oakland.
Johnson, Alfred, Hebron.
Kimball, A. P., Creston.

NEW HAMPSHIRE

Mitchell, E. S., Concord.
Foss, G. H., Hinsdale.

NEW JERSEY

Flynn, J. J., Mount Holly.
Iszard, W. H., Camden.
La Motte, W. O., Riverside.
Lippincott, L. Y., Metuchen.
Lowrey, J. H., Newark.
Spalding, H. J., Union Hill.
Swayze, A. A., Hackensack.

NEW YORK

Adler, S. H., New York City.
Bartlett, E. A., Albany.
Bates, J. B., Gloversville.
Bauer, J. L., Brooklyn.
Buck, T. D., Rochester.
Bumsted, C. Van R., Lake Placid.
Burgess, H. C., Canandaigua.
Church, F. H., Utica.
Fowler, R. H., New York City.
Hall, J. S. K., New York City.
Hamlin, Cyrus, Brooklyn.
Hubbard, F. E., Keene Valley.
Jacobs, W. F., Buffalo.
Jankiewicz, L. P., Utica.
Leiter, J. G., Brooklyn.
Maynard, A. W., New York City.
Moroney, J., Oswego.
Pashayan, N. A., Schenectady.
Pray, S. B., New Rochelle.
Reed, J. E., Jr., Schenectady.
Stechmann, F. W., New York City.
van Riempst, T. S., New York City.
Singleton, B. J., Glens Falls.
Wright, H. J., Schoharie.

NORTH CAROLINA

Adams, C. E., Gastonia.
Alexander, Annie L., Charlotte.
Costner, T. F., Charlotte.
Cranmer, J. B., Wilmington.
Faison, W. W., Goldsboro.
Felts, R. L., Durham.
Hichs, C. S., Durham.
Hicks, W. N., Durham.
McGee, J. W., Jr., Raleigh.
Montgomery, H. M., Burlington.
Morse, L. B., Chimney Rock.
Moseley, C. W., Greensboro.
Robinson, Chas., Greensboro.
Rogers, J. R., Raleigh.
Williams, A. F., Wilson.
Woodley, C. B., Kinston.

NORTH DAKOTA

Williams, R. P., Gwinner.

OHIO

Cummins, G. M., Hamilton.
Davis, H. L., Cleveland.
George, J. C., Dayton.
Kelker, H. C., Cleveland.
Logan, G. M., Akron.
Pauli, W. O., Cincinnati.
Poling, J. B., Lima.

OKLAHOMA

Andrews, Leilla E., Oklahoma City.
Blackburn, J. H., Frisco.
Dever, H. A., El Reno.
Smith, J. H., Healdton.
Welch, W. T., Pike.

OREGON

Irvine, Lloyd, Portland.
Kiehle, F. A., Portland.
Parrish, Geo., Portland.
Smith, L. A., Roseburg.

PENNSYLVANIA

[illegible] C., Pittsburg.
[illegible] G. C., Erie.
[illegible] E. H., Erie.
Eisaman, O. N., Pittsburg.
Ellis, W. T., Philadelphia.
Frishmuth, J. P., Philadelphia.
Grim, W. S., Beaver Falls.
Hearst, J. A., Philadelphia.
Hermance, W. O., Philadelphia.
Lauffer, C. A., Wilkinsburg.
Laurent, F. V., Pittsburg.
McKinnon, M. J., York.
Oberholtzer, M. B., Souderton.
Reidt, U. H., Jeannette.
Shimer, W. S., Philadelphia.
Sickler, P. C., Wilkes-Barre.
Sommerkamp, R. F., Philadelphia.
Stanton, J. N., Pittsburg.
Truckenmiller, Roy, Freeland.
West, C. W., Philadelphia.
Yoder, M. H., Lititz.

RHODE ISLAND

Hagennow, L. K., Hill Grove.
Turner, C. S., Providence.
White, C. F., Pontiac.

SOUTH CAROLINA

Maybank, Jos., Charleston.
Mood, G. McF., Charleston.
Speissegger, C. A., Jr., Charleston.
Watson, J. J., Columbia.

TENESSEE

Battle, W. B., Gallaway.
Donaldson, Sam, Dayton.
Forbes, E. C., Howell.
Johnson, T L., Greenbrier.
McBride, J. W., Covington.
McCown, R. M., Knoxville.
Pride, W. T., Memphis.

TEXAS

Burk, W. E., Galveston.
Burns, E. J., Temple.
Eckhardt, J. C. A., Houston.
Gilbert, Jos., Austin.
Griffin, S. R., Canyon City.
Heaney, H. G., Corpus Christi.
Holland, B. P., Del Rio.
Holland, M. E., Houston.
Jones, R. L., Houston.
Lane, W. J., Marshall.
McGehee, J. L., Burkburnett.
Murphy, J. H., Powell.
Pearson, O. G., Seguin.
Pyburn, J. M., Coolidge.
[illegible] insom.
[illegible] alveston.

UTAH

Gardner, W. L., Salt Lake City.
Lund, H. Z., Salt Lake City.

VIRGINIA

Archer, W. C., Blackstone.
Botts, W. N., Blackwood.
Buckner, Leigh, Roanoke.
Burks, J. C., Roanoke.
Carter, D. D., Woodstock.
Dew, H. W., Lynchburg.
Early, L. S., Petersburg.
Estill, A. D., Lexington.
Gill, S. J., Roanoke.
Ingram, Lawrence, Manchester.
Herbert, E. M., Roanoke.
Parkins, T. M., Staunton.
Peirce, C. T., Litwalton.
Vaughan, J. E., Lynchburg.
Wiley, G. S., Roanoke.

WASHINGTON

Brush, F. H., No. Yakima.
Ely, W. M., Walla Walla.
Fursey, F. R., Spokane.
Irwin, Lilian C., Seattle.
Keene, R. K., Spokane.
Wright, Louisa V., Camas.

WEST VIRGINIA

Bosworth, Perry, Huttonsville.
Fisher, Mark O., Parkersburg
Price, S. A., Weston.

WISCONSIN

Borchardt, A. C., New London.
Brehm, T. G., Racine.
Devine, C. B., Marshall.
Reeves, S. T., Tomah.

Deaths

Charles F. Warner, M.D. Jefferson Medical College, Philadelphia, 1854; formerly president of the Minnesota Valley Medical Association; a member of the International Association of [illegible] it surgeon of the One Hundred and [illegible] of the Forty-eighth New York Vol- [illegible] Civil War; alderman of Mankato, Minn., and president of the council; for twelve years city health officer, and for two terms physician of Blue Earth county; local surgeon for the Northwestern and St. Paul systems, died at his home in Mankato, July 24, from senile debility, aged 76.

Albert H. Marvin, M.D. Western Reserve University, Cleveland, 1891; University of Pennsylvania, Philadelphia, 1892; of Cleveland; a member of the American Medical Association, American Academy of Ophthalmology and Oto-laryngology and Cleveland Academy of Medicine; lecturer on rhinology in the Cleveland College of Physicians and Surgeons, and surgeon to the Throat and Ear Dispensary of the Cleveland General Hospital; died at Chautauqua, N. Y., July 29, from nephritis, aged 42.

Robert J. Christie, M.D. University of Pennsylvania, Philadelphia, 1856; a member of the Illinois State Medical Society; formerly dean and professor of medicine in the Chaddock School of Medicine, Quincy, Ill.; local surgeon of the Hannibal and St. Joseph and St. Louis, Keokuk and Northwestern railways; consulting surgeon of the Blessing Hospital, Quincy; one of the best-known practitioners of western Illinois, died at his home in Quincy, July 27, from cholelithiasis, aged 78.

Victor J. Baccus, M.D. Northwestern University Medical School, Chicago, 1898; a member of the American Medical Association; professor of gynecology in Reliance Medical College, Chicago; formerly professor of surgery and head of the surgical department of the American College of Medicine and Surgery; surgeon to Frances Willard Hospital; died at the Policlinic Hospital, Chicago, August 10, after a long illness, aged 38.

George D. Dowkontt, M.D. Jefferson Medical College, Philadelphia, 1881; formerly editor and publisher of the *Double Cross* and *Medical Missionary Record*, and medical director of the International Medical Missionary Society; who is said to have established the first free dispensary in New York City; died at the home of his son in Brooklyn, July 31, from chronic bronchitis, aged 66.

Robert Masters Wilson, M.D. Long Island College Hospital, Brooklyn, N. Y., 1873; of Lincoln, Ill.; a veteran of the Civil War; president of the Brainerd District Medical Society in 1897; a member of the Illinois State Medical Society and surgeon to St. Clara's Hospital, Lincoln; died in that institution July 27, from cholelithiasis, aged 52.

Frank R. Hansen, M.D. Hospital College of Medicine, Louisville, 1898; formerly local surgeon to the Chicago, St. Paul, Minneapolis and Omaha Railway at Heron Lake, Minn.; secretary of the board of education of Lakefield, Minn.; is reported to have died in the Jackson county jail, Lakefield, July 29, aged 37.

Augustus Lewis, M.D. University of Tennessee, Nashville, 1879; a member of the Kentucky State Medical Association; for many years a U. S. pension examining surgeon at Central City, Ky.; a veteran of the Civil War; died at his home in Greenville, July 27, from lung disease, aged 70.

Ralph B. Hanahan, M.D. Medical College of South Carolina, Charleston, 1886; of Winnsboro, S. C.; a member of the American Medical Association; for whose services during the Charleston earthquake, a medal was awarded by the city of Charleston; died at his home, July 30, from heart disease, aged 48.

Markwell Seward Curdy, M.D. Chicago Homeopathic Medical College, 1884; in 1893 and 1902, health officer of Corning, N. Y.; formerly attending physician to Corning Hospital and for many years proprietor of the Highland Pines Sanitarium, died at his home in Ithaca, N. Y., July 25, from paralysis, aged 50.

Thaddeus Donahue, M.D. Kentucky School of Medicine, Louisville, 1867; a member of the Tennessee State Medical Association; major and surgeon during the Civil War; for several years a member of the local board of U. S. pension examining surgeons; died at his home in Memphis, July 25, aged 74.

Henry Gordon Forbes, M.D. New York University, New York City, 1866; a contract surgeon in the Army during the Civil War; for three terms a member of the board of aldermen of Chicopee Falls, Mass.; died at his home in that city, July 30, from cirrhosis of the liver, aged 69.

Harvey Monroe Young, M.D. University of Alabama, Mobile, 1893; a member of the Medical Association of the State of Alabama; formerly health officer of Dothan, Ala., and physician to Houston county; died suddenly at his home in Dothan, July 27, from dengue fever.

Charles S. Morton, M.D. University of Virginia, Charlottesville, 1854; for many years a practitioner of Pamplin City, Va.; surgeon of the Tenth Georgia Infantry, C. S. A., during the Civil War; was killed by a railway train, near Lynchburg, Va., July 28, aged 77.

Percy Stansbury, M.D. Baltimore University, 1894; formerly of Baltimore; a surgeon in the volunteer service during the Spanish-American War, with service in Cuba; died suddenly at his home at Wingate's Point, Md., July 26, from heart disease, aged 42.

J. L. Johnston, M.D. Physio-Medical College of Indiana, Indianapolis, 1898; of Los Angeles, Cal.; died in the Mine Operators' Hospital at Searchlight, Nev., July 23, from the effects of a fall into the shaft of the Duplex Extension mine, aged 65.

Albert M. Curry, M.D. University of Pennsylvania, Philadelphia, 1875; of Brooklyn, N. Y.; a member of the Medical Society of the State of New York; died suddenly on the beach at Atlantic City, N. J., July 26, from heart disease, aged 59.

George C. Burton, M.D. Louisville, (Ky.) Medical College, 1881, Washington, D. C.; a member of the Medical Association of the District of Columbia; died at his old home in Mitchell, Ind., July 22, from cerebral hemorrhage, aged 52.

Wilbert G. McIntyre, M.D. Trinity Medical College, Toronto, 1901; M. C. P. and S., Ont., 1892; member of parliament for Strathcona, Alberta; died in the Strathcona Hospital, July 21, after an operation for disease of the kidney.

Grant Cullimore, M.D. Rush Medical College, Chicago, 1885; an oculist and aurist; at one time secretary of the Oklahoma Territorial Board of Health; died at his home in Oklahoma City, July 29, from typhoid fever, aged 47.

Yewell Dalton Scales, M.D. (license, Ill., 1878); of Springfield, Ill., assistant surgeon in a Tennessee regiment, C. S. A., during the Civil War; died in St. John's Hospital, Springfield, July 21, from cerebral hemorrhage, aged 65.

Archibald G. Kinkhead (license, Ill., years of practice, 1878); a member of the Illinois State Medical Society; a surgeon at Camp Yates, Springfield, Ill., during the Civil War; died at his home in Greenfield, Ill., July 23, aged 76.

Oliver H. Buford, M.D. Medical College of Georgia, Augusta, 1889; formerly an acting assistant surgeon, U. S. Army; a member of the Medical Association of Georgia; died at his home in Cartersville, July 30, aged 51.

George Heywood, M.D. Harvard Medical School, Boston, 1887; a member of the Medical Society of the State of New York; died suddenly at his home in New York City, July 30, from cerebral hemorrhage, aged 47.

Samuel Robert Dunlop, M.D. College of Physicians and Surgeons, New York City, 1890; of Trenton, N. J.; died in the Hudson Street Hospital, New York City, January 29, from morphin poisoning, aged 42.

Henry Hull, M.D. University of Michigan, Ann Arbor, 1872; a veteran of the Civil War; for eleven years postmaster of Ravenna, Mich.; died at his home, July 28, from cerebral hemorrhage, aged 62.

James A. Diddle (license, W. Va., years of practice), formerly of Winifrede, W. Va.; physician for the Coke-Coal company near Meadowbrook, W. Va., died recently at East Bank, W. Va., aged 66.

Julius Nelson Fraser, M.D. Laval University, Montreal, 1874; of Kankakee, Ill.; died at the West Side Hospital, Chicago, July 27, from tuberculosis, after a surgical operation, aged 67.

Joseph H. Price, M.D. Jefferson Medical College, Philadelphia, 1877; a member of the Medical Society of the State of Pennsylvania; died at his home in DeHaven, July 27, aged 56.

George Paul Guilford, M.D. St. Louis (Mo.) Medical College, 1870; a veteran of the Civil War; died at his home in Owosso township, Mich., July 25, from cerebral hemorrhage, aged 68.

John W. Miller, M.D. American Medical College (Eclectic), St. Louis, 1897; (license, Ill., years of practice, 1888); of Madison, Ill.; died in Edwardsville, Ill., recently, aged 71.

George W. Briggs, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1876; formerly of Chapin, Ill.; died at his home near St. James, Mo., July 25, from nephritis.

Edwin C. Hunt, M.D. Tulane University, New Orleans, 1891; a member of the Mississippi State Medical Association; died at his home in Vicksburg, July 24, aged 42.

Will L. Chester, M.D. University of Louisville (Ky.), 1879; of Jackson, Tenn.; died in a hospital in Memphis, Tenn., July 26, from disease of the stomach, aged 50.

Charles Dustin Hunking, M.D. Harvard Medical School, Boston, 1877; of Haverhill, Mass.; died at his summer home at Hampton Beach, N. H., July 23, aged 59.

Robert C. Carter, M.D. Missouri Medical College, St. Louis, 1868; a member of the Missouri State Medical Association; died at his home in Higginsville, July 5.

Andrew Jackson Swaney, M.D. New York University, New York City, 1851; died at his home in Gallatin, Tenn., July 20, from heart disease, aged 77.

Samuel E. Dyke, M.D. Louisville (Ky.) Medical College, 1875; died at his home in Spring Valley, Ohio, July 27, from heart disease, aged 62.

Melvin H. Fitts, M.D. Eclectic Medical Institute, Cincinnati, 1873; died at his home in Martin, Tenn., July 21, from cerebral hemorrhage, aged 67.

William Conner, M.D. Jefferson Medical College, Philadelphia, 1892; died at his home in Philadelphia, July 19, from paralysis, aged 59.

John M. Griffin, M.D. Tulane University, New Orleans; died at his home in Hillsboro, Tex., February 13, from nephritis, aged 77.

John McArthur Dunsmore, M.D. McGill University, Montreal, 1870; died recently at his home in Stratford, Ont., aged 77.

Marriages

Ira C. Bowman, M.D., to Miss Helen H. Ogden, both of Philadelphia, July 29.

Galen K. Hassenplug, M.D., to Miss Helen A. Sarconi, both of Denver, July 26.

Ira G. Gasser, M.D., to Miss Lillian H. Ryan, both of Philadelphia, July 29.

Helen McNichol, M.D., and Edward A. English, both of Philadelphia, July 26.

Walter F. Rochelle, M.D., Jackson, Tenn., to Miss Kathleen McCorry, June 30.

Carl Ludwig Larson, M.D., to Miss Mary Alice Prosser, both of Butte, Mont., July 19.

Ralph S. Chamberlain, M.D., Denver, to Miss Mollie J. Dorsey, at York, Pa., July 27.

George E. Parsons, M.D., Elk River, Minn., to Miss Jessie Helen Horn, of St. Paul, July 26.

Francis Schill, Jr., M.D., to Miss Olive Virginia Shaffer, both of Johnstown, Pa., June 30.

Donald Ross McIntyre, M.D., Gwinn, Mich., to Miss Carolyn Merritt King of Milwaukee, August 3.

John Wilson MacConnell, M.D., Davidson, N. C., to Miss Agnes H. Doyle, at Baltimore, July 28.

Thomas Victor Batchelor, M.D., Bovina, Miss., to Miss Maria Louise Young of Vicksburg, Miss., July 20.

Evahn Russell Walker, M.D., Marshalltown, Iowa, to Miss Mae Bower, at West Union, Iowa, recently.

D. Ashley Turner, M.D., Goldfield, Nev., to Miss Charlotte Schultz, of Walla Walla, Wash., at Los Angeles, Cal., July 19.

Medical Education and State Boards of Registration

Reciprocity with Vermont

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, states that Vermont now has reciprocal relations with District of Columbia, Illinois, Indiana, Maine, Maryland, Michigan, New Hampshire, New Jersey, New York, North Dakota, Ohio, Texas, Wisconsin and Wyoming.

Present Status of State Board Requirements

Elsewhere in this issue it will be noted that 50 medical colleges have adopted requirements of preliminary education beyond a four-year high-school education. It will be particularly interesting, therefore, to note advances in requirements made recently by state medical examining boards. Some of these requirements are graphically presented by the accompanying charts and the essential features of the various practice acts are shown in Table A.

Table B shows what states have established reciprocal relations with other states.

Table A

Essential Features of State Laws and Conditions Surrounding Medical Licensure

State.	Examinations only—Graduation not essential	Diploma and Examination.	Preliminary Education.				Medical Education.						Has Reciprocity with Other States.	Examining Boards Separate.	Exam. Board Nomt'd or App'd by State Med. Soc.	Examination Fee.	Certificate and Recording Fee.
			Law Provides For.	All Credentials Inspected by Boards.*	Years in High School Required.	Years in a College of Arts.	Advanced Standing for A.B., B.S.	Required Years of Medical Study.	Minimum Hours per Week.	Minimum Weeks per Year.	Required Months per Year.	Minimum Total Hours of Course.					
Alabama	....	Yes	....	....	....	....	....	....	....	....	....	....	Yes	....	Yes	$10	$1.00
Arizona	....	Yes	....	....	....	....	....	....	....	....	....	....	No	....	....	10	2.00
Arkansas	....	Yes	Yes	....	3	....	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yes	Yes	Yes	15	None
California	....	Yes	Yes	....	4	....	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	None
Colorado	....	Yes	Yes	....	4	1	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	None
Connecticut	....	Yes	Yes	....	4	1	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15	2.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	15	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	..	....	4	....	....	....	....	No	....	....	10	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	...	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	25	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	5.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	....	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	....	....	4	....	....	6	....	Yes	....	....	15	3.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4	....	No	4	....	30	7½	...	Yes	....	....	10	.50
Louisiana	....	Yes	....	....	....	....	....	4	....	....	....	....	Yes	Yes	Yes	10	2.00
Maine	....	Yes	Yes	....	4	....	....	4	....	....	....	....	Yes	....	....	10	2.00
Maryland	....	Yes	Yes	....	....	....	....	4	....	....	....	....	Yes	Yes	Yes	20	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	20	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	None
Mississippi	Yes	....	....	....	....	....	....	....	....	....	....	....	No	....	....	19	.25
Missouri	....	Yes	Yes	....	4	....	....	4	....	....	7	....	Yes	....	....	15	1.00
Montana	....	Yes	Yes	....	....	....	....	4	....	....	6	....	No	....	....	25	None
Nebraska	....	Yes	Yes	....	4	....	....	4	....	....	6	....	Yes	....	....	25	None
Nevada	....	Yes	Yes	....	4	....	....	4	....	....	....	....	Yes	....	....	25	None
New Hamp.	....	Yes	Yes	....	4	....	....	4	....	....	9	....	Yes	Yes	Yes	10	None
New Jersey	....	Yes	Yes	....	4	....	....	4	[illegible]	[illegible]	7	[illegible]	Yes	[illegible]	[illegible]	25	2 00
New Mexico	[illegible]	†	Yes	[illegible]	4	....	....	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	None
New [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	...	No	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	1.00
No. [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	...	....	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	.25
No. Dakota	....	Yes	Yes	....	4	2	....	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20	None
Ohio	....	Yes	Yes	Yes	4	....	....	4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	.50
Oklahoma	....	Yes	Yes	....	2	....	....	4	....	....	....	....	Yes	....	....	15	None
Oregon	....	Yes	....	....	....	....	....	....	....	....	....	....	No	....	....	10	None
Pennsylvania	....	Yes	Yes	....	4	....	....	4	....	....	....	....	Yes	Yes	Yes	25	1.00
Philippine Is.	....	Yes	Yes	....	....	....	....	....	....	....	....	....	No	....	....	15	None
Porto Rico	[illegible]	Yes	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Yes	[illegible]	[illegible]	10	5.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	2.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	.25
So. Dakota	....	Yes	Yes	....	....	1	....	4	....	26	6½	....	No	....	....	20	None
Tennessee	Yes	....	....	....	....	....	....	....	....	....	....	....	Yes	....	....	10	5.50
Texas	....	Yes	Yes	....	3	....	....	4	....	....	....	600	Yes	....	Yes	15	1.00
Utah	[illegible]	Yes	Yes	[illegible]	4	[illegible]	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]	Yes	[illegible]	[illegible]	15	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20	.25
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	1.00
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	None
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	20	.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	25	None

* Previous to or at the time of matriculation.

† Will accept a diploma without examination if from a recognized college.

PRELIMINARY EDUCATION

Chart I shows the provision made by the various states in regard to the preliminary education of applicants. Six states have adopted preliminary requirements equal to one or two years of work in a college of liberal arts in addition to a four-year high school education, thereby supporting the better class colleges with similar requirements. These are:

State Examining Board of	No. of Years Required	Affects Students matriculating	Affects all Applicants after
North Dakota	2	1907-08	1911
South Dakota	1	1907-08	1911
Minnesota	2	1908-09	1912
Colorado	1	1908-09	1912
Connecticut	1	1910-11	1914
Kansas	1	1910-11	1914

There are twenty-two states having *preliminary* requirements stated as a four-year high school education or its "equivalent," which is intended to mean a four-year high school course which has been preceded by eight years in the elementary grades. These states are:

California
Delaware
Illinois
Indiana
Iowa
Kentucky
Maine
Michigan
Missouri
Nebraska
Nevada
New Hampshire
New Jersey
New Mexico
New York
Ohio
Pennsylvania
Texas
Utah
Vermont
West Virginia
Wisconsin

In five states preliminary standards are provided for but which are less than a four-year high school education, these states being:

Arkansas
Maryland
Oklahoma
South Carolina
Texas

In three states, Idaho, Montana and North Carolina, no standards have been fixed, although the boards have authority to establish the standard. In North Carolina an amendment to make the preliminary requirement a four-year high school education was recently defeated by a plea "for the poor boy who wants to study medicine."

There still remain thirteen states having no provision in the law for preliminary education. These states are:

Alabama
Arizona
District of Columbia
Florida
Georgia
Louisiana
Massachusetts
Mississippi
Oregon
Tennessee
Virginia
Washington
Wyoming

In the fourth column of Table A it will be noted that in six states the examining boards pass on all the entrance credentials of medical students previous to, or at the time of matriculation, and conduct all entrance examinations. These states are:

Indiana
Kentucky
Michigan
New York
Ohio
Wisconsin

The weakest point in the American system of medical education still remains the low requirements of preliminary education and, speaking generally, no requirement is so poorly enforced by our examining boards, chiefly because of the difficulty of giving fair value to the credentials from our endless variety of secondary schools. Investigation reveals that the "equivalent" of a four-year high school education in several states may mean almost anything from the fair equivalent down to a 20-week course in a night school or less.

Five years ago fourteen states were allowing non-graduates to take examinations and secure licenses to practice medicine. Now all states require that candidates must be graduates of medical schools except three, these, as shown in Chart 2, being Massachusetts, Mississippi and Tennessee.

RECOGNITION OF MEDICAL COLLEGES

Chart 3 shows what state boards have been given authority to withhold recognition from low grade medical colleges. Some laws give authority but at the same time provide educational standards so low as to make the authority ineffective. Others merely provide that the college must be "legally chartered" which is of little effect since even a number of notorious diploma mills were "legally chartered." There are twenty-seven states, however, which have apparently given their boards unhampered authority to refuse recognition to medical schools not doing satisfactory work. These states are:

Colorado
Connecticut
Delaware
Idaho
Illinois
Iowa
Indiana
Kansas
Kentucky
Maine
Michigan
Minnesota
Missouri
Montana
Nebraska
New Hampshire
New Mexico
New York
North Dakota
Ohio
Rhode Island
South Carolina
South Dakota
Texas
Vermont
West Virginia
Wisconsin

Fourteen states are given authority which for various reasons is more or less limited. These states are:

Arizona
Arkansas
California
District of Columbia
Georgia
Louisiana
Nevada
New Mexico
North Carolina
Oklahoma
Oregon
Utah
Washington
Wyoming

There still remain eight states where the examining boards are not given legal authority to protect the people of their states from graduates of diploma mills or low grade medical colleges. These states are:

Alabama
Florida
Maryland
Massachusetts
Mississippi
Pennsylvania
Tennessee
Virginia

RECIPROCITY

Chart 4 shows that only thirteen states remain which have not entered into reciprocal relations with others. These states are:

Alabama
Arizona
Connecticut
California
Florida
Idaho
Massachusetts
Mississippi
Montana
Oregon
South Dakota
Rhode Island
Washington

Alabama and South Dakota have legislation providing for reciprocity but as yet no reciprocal relations with other states have been reported.

Table B shows which states have reciprocal relations and the basis on which such reciprocity has been established. During 1908, 1,092 licenses were granted through reciprocity as compared with 989 in 1907 and 685 in 1906. The figure "1" indicates that reciprocity is on the basis only of a written examination while the figure "2" indicates that reciprocity is on the basis of either a written examination or of a diploma without examination. If the applicant was originally registered without examination prior to the date when the state in which he desires re-registration began requiring examination of all applicants, he is eligible in states with the figure 2. The dates in the second column show when the states began requiring examinations of all applicants.

MULTIPLE BOARDS

The number of states having more than one board of medical examiners has been gradually reduced until now only

TABLE B.—RECIPROCITY.

The Examining Board of	Required examination of all applicants since	Reciprocates with, or recognizes certificates granted by																																																
		Alabama.	Arizona.	Arkansas.	California.	Colorado.	Connecticut.	Delaware.	Dist. of Col.	Florida.	Georgia.	Idaho.	Illinois.	Indiana.	Iowa.	Kansas.	Kentucky.	Louisiana.	Maine.	Maryland.	Mass.	Michigan.	Minnesota.	Mississippi.	Missouri.	Montana.	Nebraska.	Nevada.	New Hamp.	New Jersey.	New Mexico.	New York.	No. Carolina.	North Dakota.	Ohio.	Oklahoma.	Oregon.	Pennsylvania.	Rhode Island.	So. Carolina.	South Dakota.	Tennessee.	Texas.	Utah.	Vermont.	Virginia.	Washington.	West Virginia.	Wisconsin.	Wyoming.
Alabama	1903	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arizona	1897	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Arkansas	1903	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
California	1901	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Colorado	1906	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1	1	1	..	..	1	1	..	1	..	1	1	..	1	..	..	..	..	1	..	..	..	..	..	..	1	1	1	..	..	..	..	1	..
Connecticut	1897	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	1895	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..
District of Columbia	1896	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	1	..	1	1	..	..	..	2	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..	1	1	..	2	2	..
Florida	1889	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	1895	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	2	..	..	2	..	2	..	..	..	..	2	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			2	..	2	2	..
Idaho	1899																																																	
Illinois	1899																																																	
Indiana	1901																																																	
Iowa	1899													2	..	2	2	..	2	2	..	2	2	..	2	..	2	2	1	1	..	..	2	1	2	..	..	..	..	2	..	..	1	2	..	1	..	2	2	1
Kansas	1902			..	..	..	..	..	..	..	..	..	1	2	2	..	2	..	..	2	..	2	2	..	..	..	2													2	..	..	..	..	..	..	..	2	2	..
Kentucky	1907	..	..	..	..	1	..	..	1	..	2	..	..	2	2	2	..	..	2	2	..	2	2	..	2	..														2	..	2	1	2	..	1	..	2	2	..
Louisiana	1894	..	..	..	..	1	..	1	1	..	2	..	1	1	1	1	1	..	1	1	..	1	1	..	1	..														1	..	..	1	1	1	1	..	..	1	..
Maine	1901	..	..	..	..	1	..	1	1	..	2	..	1	2	2	2	2	1	..	2	..	2	2	..	2	..	2	2	..	1	..	..	..	1	2	2	..	..	..	2	..	2	1	2	2	..	..	2	2	1
Maryland	1892	..	..	..	..	..	..	1	1	..	2	..	1	2	2	2	2	..	2	..	..	2	2	..	2	..	2	2	1	..	..	..	..	..	2	2	..	..	..	2	..	..	1	..	2	1	..	2	2	..
Massachusetts	1895																																																	
Michigan	1899																																																	
Minnesota	1887																								2																									
Mississippi	1882																2	1	2	2	..	2	..	..	2																									
Missouri	1901																																																	
Montana	1889																																																	
Nebraska	1903																												2	1	..	..	..	..	2	1	..	..	..	..	..	2	1	2	..	1	..	2	2	1
Nevada	1907																												2	..	..	..	..	..	..	..	..	..	..	2	..	..	1	..	..	..	..	..	2	..
New Hampshire	1897																			1	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	2	..
New Jersey	1890	..	..	..	..	1	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..
New Mexico	1907	..	..	..	..	..																																												
New York	1890	..	..	..	..	..																																												
North Carolina	1885	..	..	..	..	..																																												
North Dakota	1890	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..																																		
Ohio	1904	..	..	..	..	1	..	..	2	..	..	..	1	2	2	..																																		
Oklahoma	1903	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Oregon	1895	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pennsylvania	1894	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..																			
Rhode Island	1902																																																	
South Carolina	1904																																																	
South Dakota	1903																																																	
Tennessee	1901																																																	
Texas	1901																																																	
Utah	1898																																																	
Vermont	1904			..	..	..	..	..	1	..	..	..	1	2	..	..	..	..	2	2	..	2	..	..	..	..	..	..	2	1	..	1	..	1	2	..	..	..	..	..	..	..	1	..	..	..	..		2	1
Virginia	1885	..	..	..	..	..	..	1	1	..	2	..	..	2	1	..	1	1	..	1	..	1	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	2	2	..
Washington	1890	..	..	..	..	..																								..	..																			
West Virginia	1895	..	..	..	..	..																							2	1	..																			
Wisconsin	1901	..	..	..	..	1																							2	1	..																			
Wyoming	1901	..	..	..	..	..	..	..	..	..	..	..	1	1	1	..	..	..	..	1	..	1	1	..	1	..	1	..	..	..						..	..	..	..	..	..	..	..	..	1	..	..	1	..	..

Key: 1, Reciprocates on the basis of an examination only. 2, Reciprocates on the basis either of a diploma or of an examination.
NOTE A.—Reference should also be made in the preceding pages to the paragraph concerning reciprocity in the law of each state.

ten remain. These states and the number of boards in each are as follows:

Arkansas, 3.
Connecticut, 3.
Delaware, 2.
District of Columbia, 3.
Florida, 3.
Georgia, 3.
Louisiana, 2.
Maryland, 2.
New Hampshire, 3.
Pennsylvania, 3.

The division of the responsibility for the safeguarding of public interests always leads to confusion and adds to the difficulty of upholding any fair standard of licensure.

OSTEOPATHY

Every new school of medicine which tries to secure the right to practice medicine invariably holds standards of preliminary and medical education lower than those already in the field. That is the chief argument against them. So the new sect, osteopathy, which, under the pretext that its followers were "not practicing medicine," has secured favorable legislation in a considerable number of states (Chart 6), upholds practically no standards for admission and gives at most only a three-year course in medicine. The legal status is discussed more in detail below:

ONE STANDARD NECESSARY

One thing should be clearly borne in mind in all discussions of medical sects, namely: Regardless of the methods or limitations of treatment employed, practitioners are alike in that they must make diagnoses—must differentiate between health and disease. To treat a disease without knowing what it is, is merely guesswork, is unscientific, is a dangerous procedure and is an imposition on the patient. For these reasons there should be one standard set for all practitioners of medicine regardless of the methods of treatment, and this standard should be sufficiently high to guarantee that the practitioner is able to properly diagnose diseases. If he can comply with that standard he should be granted a license and allowed to practice by whatever method he chooses. If he can not comply with that standard he is a menace to the lives of any who would be unfortunate enough to be his patients, and for that reason should not be allowed to practice.

Present Legal Status of Osteopathy

Closely allied to the regulation of the practice of medicine is the problem of the regulation of the various sects and fads which are constantly arising. The most conspicuous one just at present is the so-called "school of osteopathy," the peculiar teachings of which are too well known to require discussion. With the scientific fallacies of this cult we are not at present concerned, but simply with the present legal status of the followers of this school in the various states.

Examination of the existing laws shows an interestingly contradictory and peculiarly characteristic condition. In some states, the practice of osteopathy has been legally decided to be the practice of medicine, while in other states it has been decided by equally weighty and learned authorities that it is not the practice of medicine. Naturally, in most of those states in which a separate board of osteopathic examiners has been created, the courts have held that osteopathy was something separate and distinct from the practice of medicine, while in those states in which osteopaths have been added to the existing boards, the courts have held that osteopathy was simply one form of the practice of medicine.

In seventeen states, the existing laws authorize a separate board, to examine and license practitioners of osteopathy. These states, with the year of the adoption of the law, are as follows: Arkansas, 1903; Connecticut, 1901; Florida, 1909; Idaho, 1907; Louisiana, 1908; Michigan, 1903; Minnesota, 1903; Missouri, 1907; Montana, 1905; Nebraska, 1909; New Mexico, 1905; North Carolina, 1907; North Dakota, 1909; Pennsylvania, 1909; South Dakota, 1907; Tennessee, 1905; Vermont, 1904.

In eleven states, the law authorizes the appointment of an osteopath on the state board. These states, with the date of the passage of the law, are: California, 1907; Indiana, 1905; Iowa, 1902; Kentucky, 1904; New York, 1907; Oklahoma, 1907; Oregon, 1907; Texas, 1907; Utah, 1907; Washington,

CHART I.—STATE BOARD REQUIREMENTS OF PRELIMINARY EDUCATION

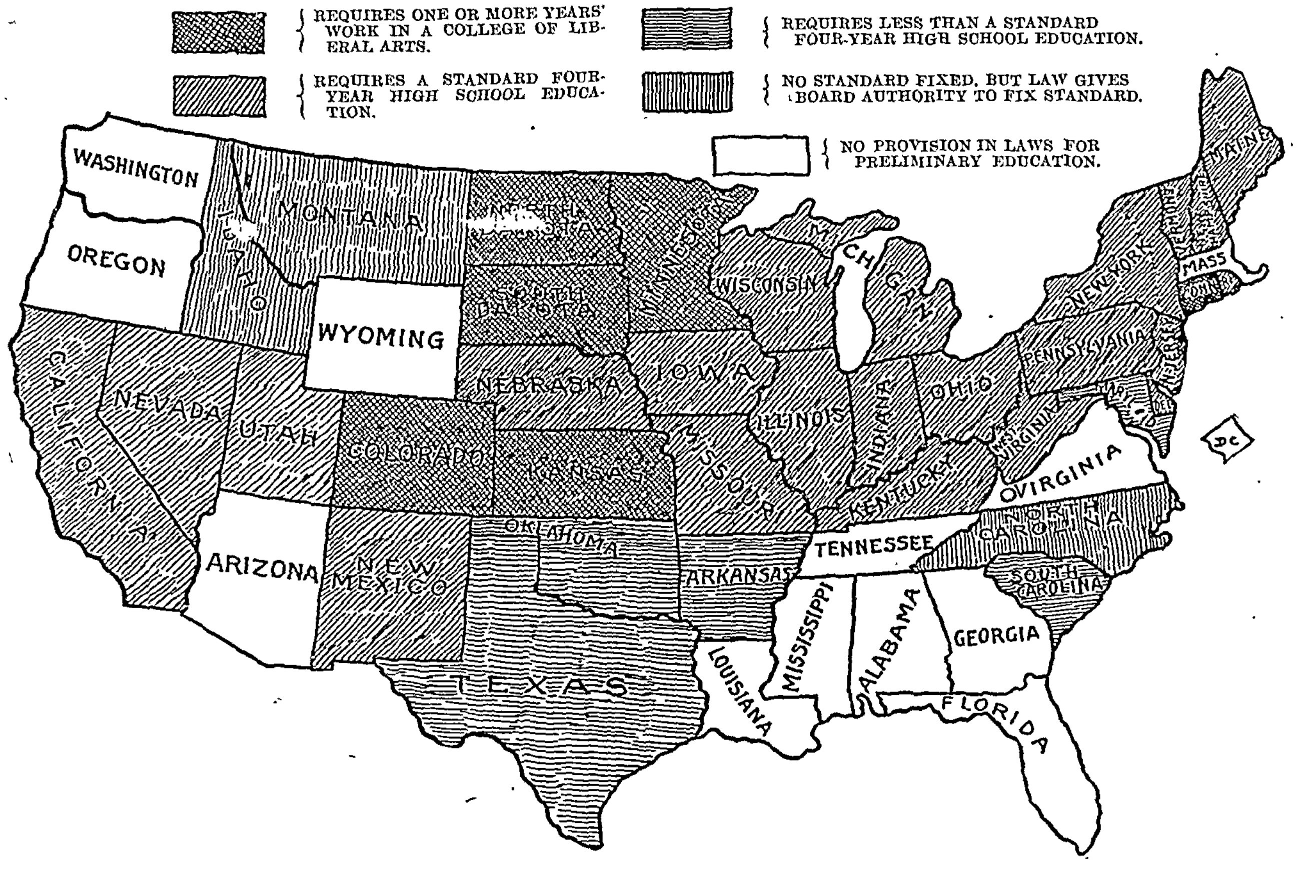


Chart 2.—States Requiring Graduation from a Medical College

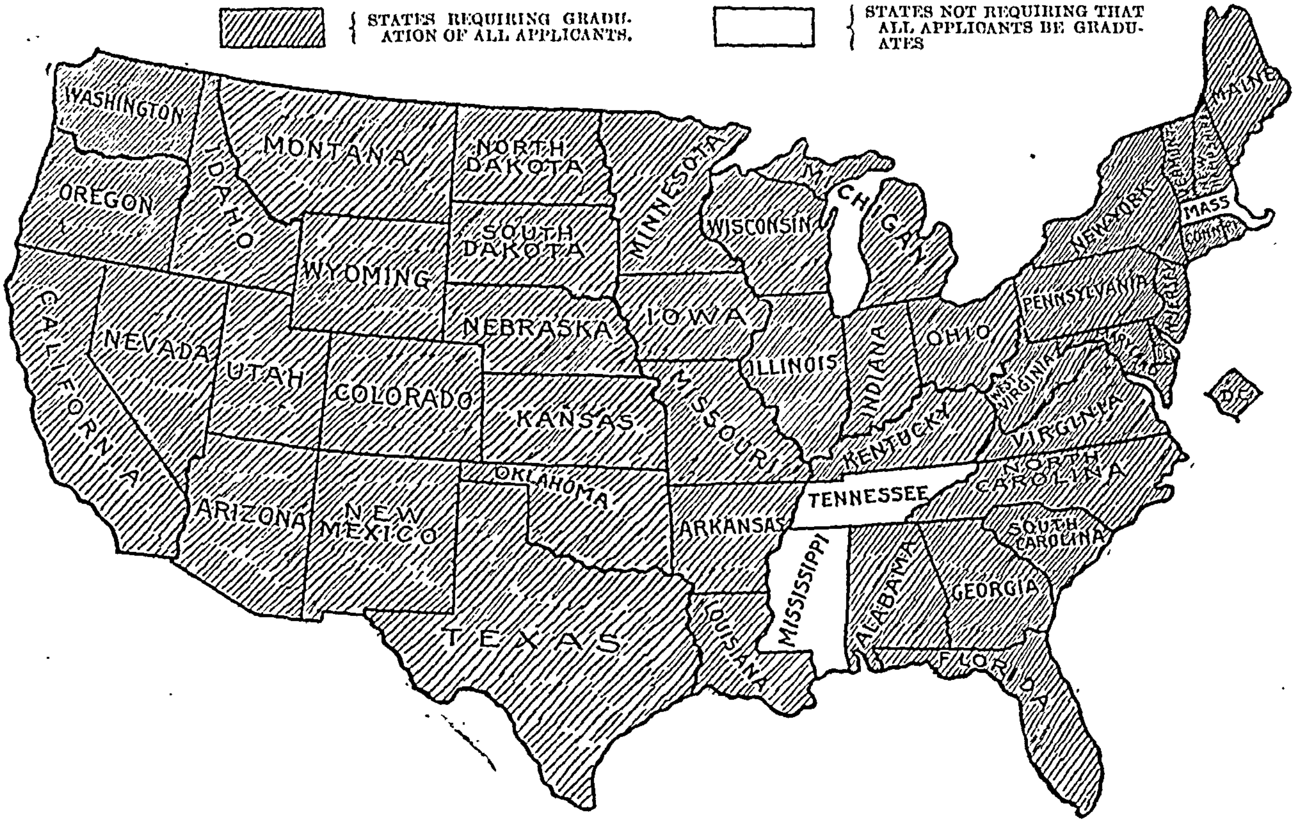
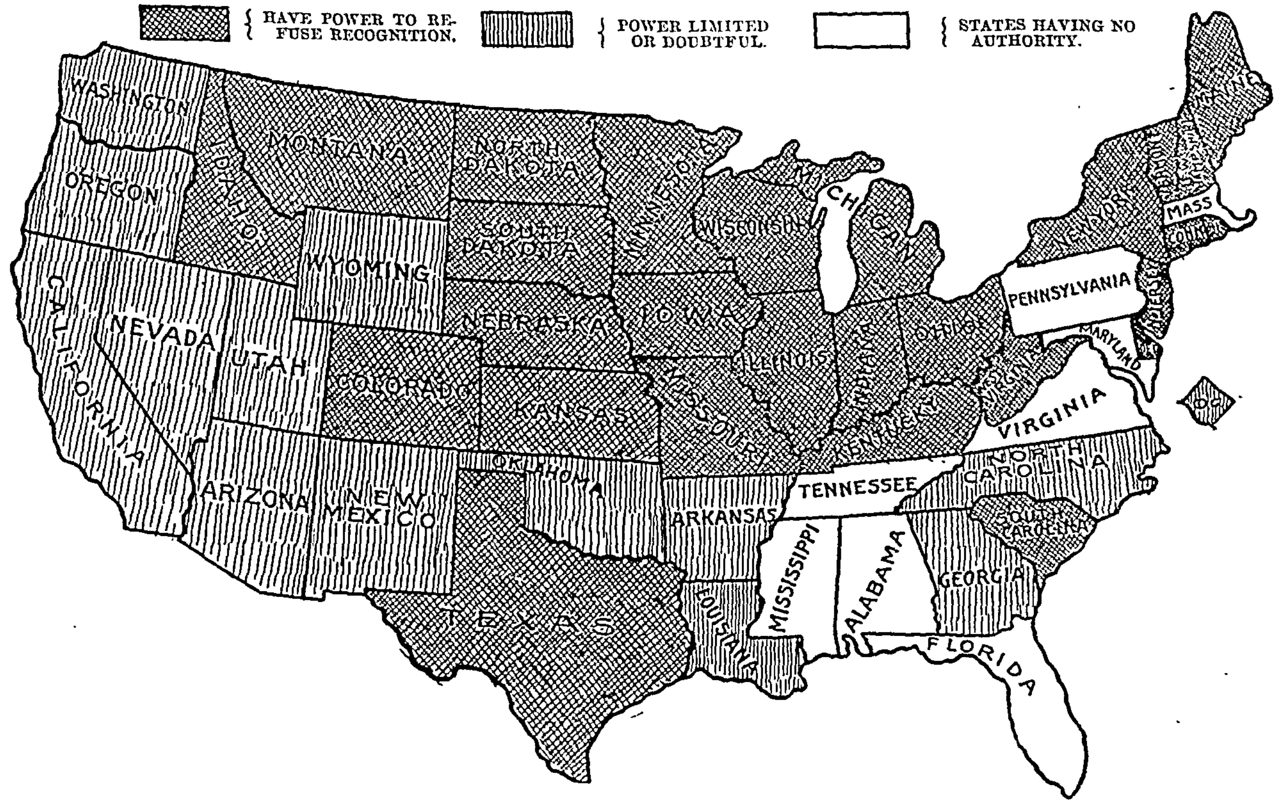


Chart 3.—State Boards Having Authority to Refuse Recognition to Low Grade Medical Colleges



1909; Wisconsin, 1903. In Iowa, while authorized, the governor has not yet appointed an osteopathic member.

In two states, Colorado and Maryland, osteopaths are exempt from the operation of the medical practice act. In nine states, the examining board is authorized to examine and register them as osteopaths. These states are: Delaware, 1907; Kansas, 1901; Massachusetts, 1909; Nebraska, 1905; Ohio, 1906; South Carolina, 1904; Washington, 1903; West Virginia, 1907; Wyoming, 1905. In Delaware, Nebraska and Ohio the board is authorized to call on an osteopath to assist in the examinations. In nine states there is no existing regulation regarding this sect. These states are: Alabama, Arizona, District of Columbia, Georgia, Maine, Mississippi, New Hampshire, Nevada and Rhode Island. In Alabama and Arizona, osteopaths can secure licenses on taking the same examination as other applicants.

Regarding the legal status of osteopathy as a system, in the following states it has been declared to be the practice of medicine, either by statutory enactment or by decision of the courts: Alabama, Arizona, California, Delaware, Indiana, Iowa, Kentucky, New York, Ohio, Texas, Utah, Virginia, West Virginia, Wisconsin, Wyoming. In the following states it has been declared not to be the practice of medicine: Arkansas, Colorado, Connecticut, Georgia, Idaho, Illinois, Kansas, Louisiana, Michigan, Minnesota, Missouri, Montana, Nebraska, North Carolina, Oklahoma, Oregon, South Carolina, South Dakota, Tennessee and Vermont, making fifteen states in which the osteopath is a practitioner of medicine and twenty states in which he is not.

The absurdity and utter inconsistency of such a situation is apparent, the entire fallacy, from a scientific standpoint, lying in the confusion by courts, lawyers, and legislators of therapeutic measures and systems of practice with so-called "schools of medicine," as well as the equally common absurdity of restricting one's conception of the meaning of the term "practice of medicine"—which has been adopted as a convenient phrase to describe the work of those who care for the sick—as being limited to the administration or use of drugs. This fallacy arises from the fact that, in the popular mind, the most obvious means used for treating diseases has gradually come to stand for not only the *entire* system of treatment but also for the *entire* mass of scientific knowledge.

From a legal point of view, the absurdity of sectarian legislation lies in the establishment of two standards of requirements for the same privilege. The state, in the exercise of its police power to regulate or restrict occupations, professions and trades, requires that each individual desiring to engage in the work of treating the sick, must present certain qualifications and must satisfactorily pass an examination test of a certain standard. Such a standard of qualification having been established, it is plainly inequitable for the state to adopt a law admitting individuals to the same privileges on a lower basis of qualification, since such favoritism constitutes class legislation and is clearly unconstitutional. In other words, there is no more legal justification for two standards for the practice of medicine in any state than there is for two standards for the practice of law, nor has a state any more right to recognize sectarianism in medicine than it has to recognize sectarianism in the legal profession, or in religious matters. We can easily conceive of the reception which would be afforded an individual who would present a bill in any of our state legislatures asking that a certain sect or class of men, unlearned in the law and unrecognized in legal circles, be authorized to practice law, to appear before the courts and to exercise the rights and privileges of attorneys with one-half or two-thirds of the intellectual and technical training required by the bar association of the state. Such a bill would be laughed out of the legislature, even if any member had the temerity to present it. Yet this is exactly the situation which sectarian medical laws create, so far as state recognition of medicine is concerned. The reason why state legislatures have committed absurdities along medical lines which they would not tolerate for a moment on legal subjects, is that the majority of the members of the legislature are informed on legal questions and consequently can legislate intelligently, while on medical subjects they are entirely uninformed and are consequently more easily influenced by their prejudices and personal relations.

CHART 4.—INTERSTATE RECIPROCITY IN MEDICAL LICENSURE

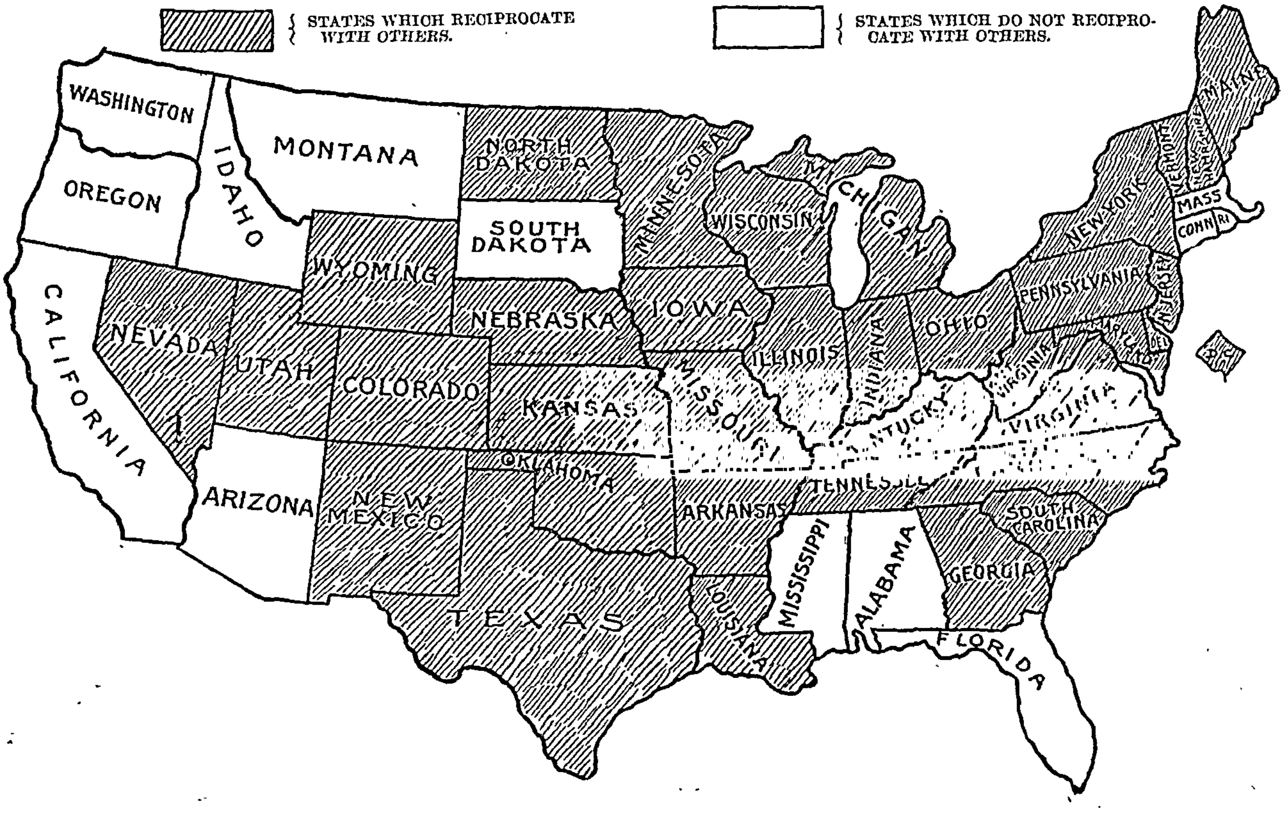


CHART 5.—STATES HAVING SECTARIAN BOARDS

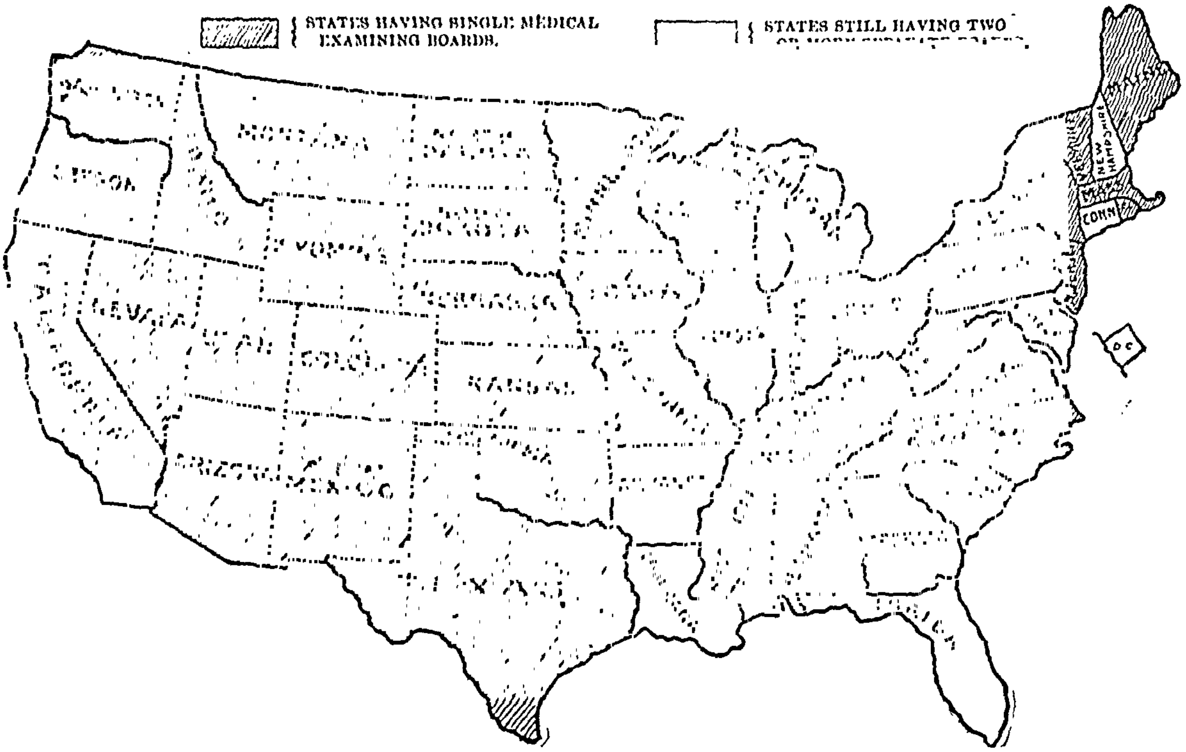
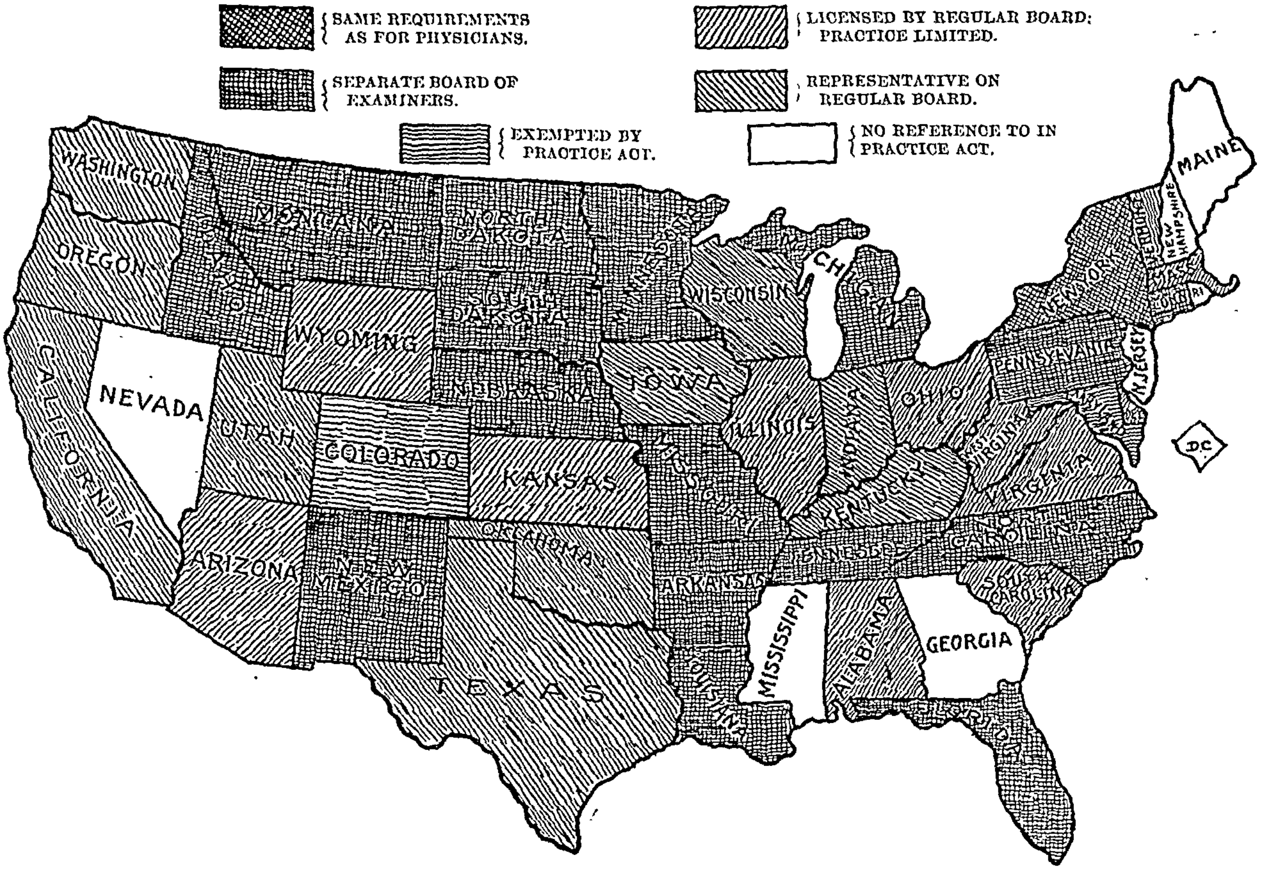


CHART 6.—OSTEOPATHY



Book Notices

Text-Book of Embryology. By Frederick Randolph Bailey, A.M., M.D., Adjunct Professor of Histology and Embryology, College of Physicians and Surgeons (Med. Dept. Columbia Univ.) and Adam Marion Miller, A.M., Instructor in Histology and Embryology, College of Physicians and Surgeons (Med. Dept. Columbia Univ.). Cloth. Pp. 672, with illustrations. Price, $4.50. New York: William Wood & Co., 1909.

This book, while including subjects of interest to the general student of embryology, is primarily intended "to present to the student of medicine the most important facts of development, at the same time emphasizing those features which bear directly on other branches of medicine." It is accordingly divided into two parts and an appendix. Part I deals with general development. Part II with the development of the adult tissues and organs. To each chapter there is appended a good bibliography and "practical suggestions" for laboratory work, embracing the subjects dealt with in that chapter. In each chapter of Part II there is added under "anomalies" an embryologic consideration of malformations peculiar to the structures taken up in the respective chapter. There is also a special chapter on teratogenesis in which are discussed duplicity of structures and fetus, defects in fetus and the causes underlying the origin of monsters.

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The Errors of Mind-Healing. By Reinhold Willman, M.D., St. Joseph, Mo. Cloth. Pp. 179. Price, $1. St. Joseph, Mo.: The Advocate Publishing Co.

Dr. Willman, with the praiseworthy intention of setting forth, as he says, the view that the physician can and must take of the Scriptural records of miracles, argues to show that there is nothing in common between those miracles and the modern use of hypnotism, suggestion, faith healing, etc. Accepting the accuracy of the records, which a believer in Christianity is obliged to do, he seems to us to be on the right track. There are some clergymen and critics who attempt to reconcile the New Testament miracles with modern science and account for them as far as they can by known phenomena. Dr. Willman shows the fallacy of this and makes it clear that their only alternative to accepting the Biblical statements is to doubt the records. In the latter part of his book he takes up modern faith healing, Eddyism, Dowieism, etc., and shows up the commercial spirit that underlies nearly all of them. We wish he could have had his book revised to free it from certain slips in the author's English as well as numerous typographical errors. His quotations from Mrs. Eddy's "Science and Health" and the text-books of Emmanuelism are rather apt in support of his argument.

The Greatest Good of Mankind: Physical or Spiritual Life. By William Wenzlick, LL.B., M.D. Cloth. Pp. 374. Price, $1.50 net. Chicago: Published by the Author, 1206 Lawrence Ave.

This book is made up of alternate opposed views in regard to questions of sociology, religion, etc., by two supposed writers, Dr. Fact and the Reverend Faith. Dr. Fact, the materialist, critic of the Bible after Tom Paine, and opponent of prohibition, represents Dr. Wenzlick's sentiments, while the Reverend Faith is a severe specimen of the cloth and not at all such a lovable representative of religion as its friends would prefer to have speak in refutation of the scoffer's sophistries. This method of setting up a man of straw or arguing with a dummy is a convenient one because the disputant has in it altogether his own way. We very much doubt its effectiveness in argument, however. Dr. Wenzlick has evidently done a large amount of reading of the Scriptures, but in a very critical and hostile spirit, which would probably give offense to a large majority of the reading public if his book were so fortunate as to come under their notice. In fact, a large proportion, we believe, of those who agree with him more or less in his ideas of personal liberty, so-called, would take offense at his sentiments in some other lines. His estimate of the value of alcohol and the blessing of the saloon will not be shared by the majority of conservative physicians.

Society Proceedings

ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN

Third Annual Meeting, held at Atlantic City, June 7, 1909

(Concluded from page 477)

Personal Relations of Teacher and Student

Dr. Edward J. Wynkoop, Syracuse, N. Y.: In many colleges, pediatrics is taught only in the fourth year. It is a most important subject for the young practitioner, inasmuch as two-thirds of his practice during the first few years will consist of accidents and diseases occurring among children. Only by the institution of more clinical work in the college can we hope to come in more personal contact with the student. The identity of the individual student is not always known. A personal knowledge of each man should be insisted on. The classes should be divided into sections of ten men each so as to establish personal relationship with each man. Teachers in medical colleges should take more interest in the social side of the student's life, and teachers should likewise bear in mind that they owe the student something more than merely class-room instruction.

DISCUSSION

Dr. A. C. Cotton, Chicago: The tendency to-day is toward larger teaching faculties so as to bring the students in touch with the subject in smaller classes. The teacher has an opportunity, therefore, of studying the actual needs of the individual student. The large staffs of the hospitals connected with our colleges enable the assistants to report to the chief of the staff the needs of the various students. Frequent quizzes, and the visiting of the staff by the students, partly fills the void created by the departed preceptor who was so valuable in olden times.

Dr. A. Jacobi, New York City: The only place to teach medicine is at the bedside of the patient, or, if the college has a hospital connection, from material secured from the outpatient department. Unfortunately, most of our medical schools have no hospitals. We have too many students, or, perhaps, we have too many colleges. Large schools with large hospitals require a large teaching staff, and the aim of the teacher should be first, to secure suitable material for instructing the students, and, second, to divide the classes into sections of ten or twelve men each, so as to impart almost individual instruction.

Report of the Committee on the Teaching of Pediatrics

Dr. S. W. Kelley, Cleveland: Each college should have a chair of pediatrics with full professorship. Pediatrics should be studied in the junior and senior years. The course should be graded and include the anatomy and physiology of infancy and all the affections of childhood both medical and surgical. The surgical side of pediatrics may be taught in the chair of surgery. A large part of the teaching should be clinical. The classes should be divided into sections of ten or twelve men. No college without a hospital or dispensary for children is prepared to successfully teach diseases of children.

How Should the Percentage Method of Milk Modification be Taught?

Dr. J. Finley Bell, Englewood, N. J.: The chemical and physical constituents of cow's milk as compared to those of mother's milk are so different that the percentage method as taught to-day does not solve the problem of milk modification. The proteid and fat percentages are at fault. The student in college should be taught how to examine specimens of milk. We should teach general principles only, permitting the student to form his own conclusions. The universal adoption of the metric system will simplify the matter and render the results more accurate. In preparing the formulas a knowledge of the physiologic needs of the infant is necessary.

What Should Be Taught Concerning Proprietary Foods and Condensed Milk?

Dr. I. L. Poloske, Detroit: The students in our colleges should be taught the difference between cow's milk and proprietary foods. Proprietary foods are deficient in fat and have an excess of carbohydrates. Condensed milk and proprietary foods predispose the baby to scurvy, rickets, constipation and the various infectious diseases. All proprietary foods are rich in flour and dextrin. The physician must know the value of the food he prescribes and with patented foods this is impossible. Condensed milk should be used in catarrhal diseases where cow's milk can not be used. The enormous number of proprietary foods on the market is due to the large number of physicians who prescribe them.

DISCUSSION

Dr. H. M. McClanahan, Omaha: There are two reasons why proprietary foods are used: 1. They are advertised directly in the home. 2. A large percentage of the profession is indifferent as to the methods of milk modification. It is a very good plan to warn students regarding the harmful effect of these patented foods.

What Should Be Taught About Mixed Feeding?

Dr. H. M. McClanahan, Omaha: Science and art can not prepare a food equal to breast milk. Mothers should nurse their babies for at least six months. Many mothers wean babies early on the advice of careless physicians. By mixed feeding is meant the substitution of one or more breast feedings daily by some other food. There are two reasons for mixed feeding: 1. When the mother's health is impaired, or she is suffering from loss of weight or anemia. 2. When the baby fails to thrive, does not sleep well, or has indigestion frequently. Mixed feeding is better and safer than artificial feeding. Teachers should instruct students as to the importance of mixed feeding. Careless weaning often means loss of life, while a combination of bottle and breast feeding in many cases will save the baby's life. The laity should be educated on the subject of mixed feeding.

What Shall We Teach Concerning the Feeding of Difficult Cases?

Dr. G. R. Pisek, New York: We meet with two classes of difficult cases: 1. Infants that are healthy at birth but that develop digestive disturbances after being breast fed. 2. Babies that do not thrive from the first. Teach the student the value of foods and the physical and chemical properties of milk. The student should be taught how to prepare the milk formulæ and he should likewise be taught the elementary laws of biology. Any form of food that agrees may be used as a starting point. Study the individual needs of the infant and gradually work up to a formula that will meet the particular requirements.

Discussion on Infant Feeding

Dr. J. W. Van Derslice, Chicago: As soon as we eliminate methods so soon will we get results in these feeding cases. We must stop teaching methods and teach infant feeding. This ought to be our next step. In regard to mixed feeding, I prefer the admixture of cow's milk and mother's milk to giving the child table foods.

Dr. A. C. Cotton, Chicago: Mixed feeding does good when mother's milk fails. It is a mistake to recommend the bottle in all cases except where there is a contraindication to breast feeding. Breast-fed babies have dyspepsia which is not always due to improper feeding but rather due to bad mother's milk.

Dr. I. L. Poloske, Detroit: Teach the obstetrician not to recommend early weaning and early recourse to the bottle. He is usually in charge of the case for the first few weeks and can be a power for much good in this direction. As soon as you advocate bottle feeding as a substitute for breast feeding you lessen stimulation to the breast and hence there is less breast milk.

AMERICAN ORTHOPEDIC ASSOCIATION

Twenty-second Annual Meeting, held at Hartford, Conn., June 14-16, 1909

(Continued from page 479)

Method of Anchoring Transplanted Tendons

Dr. S. L. McCurdy, Pittsburg, described his method as consisting in wrapping the tendon entirely around the bone, passing it through the ligament, or securing it to some dense or firm tissue, rather than in simply suturing it to the periosteum, thus guaranteeing a firm anchorage after union.

DISCUSSION

Dr. Rugh: I can testify to the value of this method. I think that the less one disturbs the bone from its position the less one will interfere with nutrition and the more quickly there will be union. Formerly I sawed off the ends of the bone squarely, but now I simply saw one side, and then go in through the other way. I have also used the method of having a hole through the end of the drill, as well as the wooden screws. I have never had any harm result from using silver wire.

Dr. Wilson: I think that many of the objections to silver wire lie in the quality of the metal used. Iron always produces irritation by corroding and requires removal in a few weeks.

Dr. McCurdy: I have been taking x-ray pictures from time to time, and I find that the shadow cast by the wire is growing less, showing that it is being disintegrated and will gradually disappear.

Unusual Cases of Caries of the Spine in Adults

Dr. E. G. Brackett, Boston, considered some of the special features of this condition and the etiology of some of the spinal symptoms. He also made an attempt to classify them

Book Notices

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Dr. Willman, with the praiseworthy intention of setting forth, as he says, the view that the physician can and must take of the Scriptural records of miracles, argues to show that there is nothing in common between those miracles and the modern use of hypnotism, suggestion, faith healing, etc. Accepting the accuracy of the records, which a believer in Christianity is obliged to do, he seems to us to be on the right track. There are some clergymen and critics who attempt to reconcile the New Testament miracles with modern science and account for them as far as they can by known phenomena. Dr. Willman shows the fallacy of this and makes it clear that their only alternative to accepting the Biblical statements is to doubt the records. In the latter part of his book he takes up modern faith healing, Eddyism, Dowieism, etc., and shows up the commercial spirit that underlies nearly all of them. We wish he could have had his book revised to free it from certain slips in the author's English as well as numerous typographical errors. His quotations from Mrs. Eddy's "Science and Health" and the text-books of Emmanuelism are rather apt in support of his argument.

THE GREATEST GOOD OF MANKIND: PHYSICAL OR SPIRITUAL LIFE. By William Wenzlick, LL.B., M.D. Cloth. Pp. 374. Price, $1.50 net. Chicago: Published by the Author, 1206 Lawrence Ave.

This book is made up of alternate opposed views in regard to questions of sociology, religion, etc., by two supposed writers, Dr. Fact and the Reverend Faith. Dr. Fact, the materialist, critic of the Bible after Tom Paine, and opponent of prohibition, represents Dr. Wenzlick's sentiments, while the Reverend Faith is a severe specimen of the cloth and not at all such a lovable representative of religion as its friends would prefer to have speak in refutation of the scoffer's sophistries. This method of setting up a man of straw or arguing with a dummy is a convenient one because the disputant has in it altogether his own way. We very much doubt its effectiveness in argument, however. Dr. Wenzlick has evidently done a large amount of reading of the Scriptures, but in a very critical and hostile spirit, which would probably give offense to a large majority of the reading public if his book were so fortunate as to come under their notice. In fact, a large proportion, we believe, of those who agree with him more or less in his ideas of personal liberty, so-called, would take offense at his sentiments in some other lines. His estimate of the value of alcohol and the blessing of the saloon will not be shared by the majority of conservative physicians.

Society Proceedings

ASSOCIATION OF AMERICAN TEACHERS OF THE DISEASES OF CHILDREN

Third Annual Meeting, held at Atlantic City, June 7, 1909

(Concluded from page 477)

Personal Relations of Teacher and Student

DR. EDWARD J. WYNKOOP, Syracuse, N. Y.: In many colleges, pediatrics is taught only in the fourth year. It is a most important subject for the young practitioner, inasmuch as two-thirds of his practice during the first few years will consist of accidents and diseases occurring among children. Only by the institution of more clinical work in the college can we hope to come in more personal contact with the student. The identity of the individual student is not always known. A personal knowledge of each man should be insisted on. The classes should be divided into sections of ten men each so as to establish personal relationship with each man. Teachers in medical colleges should take more interest in the social side of the student's life, and teachers should likewise bear in mind that they owe the student something more than merely classroom instruction.

DISCUSSION

DR. A. C. COTTON, Chicago: The tendency to-day is toward larger teaching faculties so as to bring the students in touch with the subject in smaller classes. The teacher has an opportunity, therefore, of studying the actual needs of the individual student. The large staffs of the hospitals connected with our colleges enable the assistants to report to the chief of the staff the needs of the various students. Frequent quizzes, and the visiting of the staff by the students, partly fills the void created by the departed preceptor who was so valuable in olden times.

Dr. A. Jacobi, New York City: The only place to teach medicine is at the bedside of the patient, or, if the college has a hospital connection, from material secured from the outpatient department. Unfortunately, most of our medical schools have no hospitals. We have too many students, or, perhaps, we have too many colleges. Large schools with large hospitals require a large teaching staff, and the aim of the teacher should be first, to secure suitable material for instructing the students, and, second, to divide the classes into sections of ten or twelve men each, so as to impart almost individual instruction.

Report of the Committee on the Teaching of Pediatrics

Dr. S. W. Kelley, Cleveland: Each college should have a chair of pediatrics with full professorship. Pediatrics should be studied in the junior and senior years. The course should be graded and include the anatomy and physiology of infancy and all the affections of childhood both medical and surgical. The surgical side of pediatrics may be taught in the chair of surgery. A large part of the teaching should be clinical. The classes should be divided into sections of ten or twelve men. No college without a hospital or dispensary for children is prepared to successfully teach diseases of children.

How Should the Percentage Method of Milk Modification be Taught?

Dr. J. Finley Bell, Englewood, N. J.: The chemical and physical constituents of cow's milk as compared to those of mother's milk are so different that the percentage method as taught to-day does not solve the problem of milk modification. The proteid and fat percentages are at fault. The student in college should be taught how to examine specimens of milk. We should teach general principles only, permitting the student to form his own conclusions. The universal adoption of the metric system will simplify the matter and render the results more accurate. In preparing the formulas a knowledge of the physiologic needs of the infant is necessary.

What Should Be Taught Concerning Proprietary Foods and Condensed Milk?

Dr. I. L. Poloske, Detroit: The students in our colleges should be taught the difference between cow's milk and proprietary foods. Proprietary foods are deficient in fat and have an excess of carbohydrates. Condensed milk and proprietary foods predispose the baby to scurvy, rickets, constipation and the various infectious diseases. All proprietary foods are rich in flour and dextrin. The physician must know the value of the food he prescribes and with patented foods this is impossible. Condensed milk should be used in catarrhal diseases where cow's milk can not be used. The enormous number of proprietary foods on the market is due to the large number of physicians who prescribe them.

DISCUSSION

Dr. H. M. McClanahan, Omaha: There are two reasons why proprietary foods are used: 1. They are advertised directly in the home. 2. A large percentage of the profession is indifferent as to the methods of milk modification. It is a very good plan to warn students regarding the harmful effect of these patented foods.

What Should Be Taught About Mixed Feeding?

Dr. H. M. McClanahan, Omaha: Science and art can not prepare a food equal to breast milk. Mothers should nurse their babies for at least six months. Many mothers wean babies early on the advice of careless physicians. By mixed feeding is meant the substitution of one or more breast feedings daily by some other food. There are two reasons for mixed feeding: 1. When the mother's health is impaired, or she is suffering from loss of weight or anemia. 2. When the baby fails to thrive, does not sleep well, or has indigestion frequently. Mixed feeding is better and safer than artificial feeding. Teachers should instruct students as to the importance of mixed feeding. Careless weaning often means loss of life, while a combination of bottle and breast feeding in many cases will save the baby's life. The laity should be educated on the subject of mixed feeding.

What Shall We Teach Concerning the Feeding of Difficult Cases?

Dr. G. R. Pisek, New York: We meet with two classes of difficult cases: 1. Infants that are healthy at birth but that develop digestive disturbances after being breast fed. 2. Babies that do not thrive from the first. Teach the student the value of foods and the physical and chemical properties of milk. The student should be taught how to prepare the milk formulæ and he should likewise be taught the elementary laws of biology. Any form of food that agrees may be used as a starting point. Study the individual needs of the infant and gradually work up to a formula that will meet the particular requirements.

Discussion on Infant Feeding

Dr. J. W. Van Derslice, Chicago: As soon as we eliminate methods so soon will we get results in these feeding cases. We must stop teaching methods and teach infant feeding. This ought to be our next step. In regard to mixed feeding, I prefer the admixture of cow's milk and mother's milk to giving the child table foods.

Dr. A. C. Cotton, Chicago: Mixed feeding does good when mother's milk fails. It is a mistake to recommend the bottle in all cases except where there is a contraindication to breast feeding. Breast-fed babies have dyspepsia which is not always due to improper feeding but rather due to bad mother's milk.

Dr. I. L. Poloske, Detroit: Teach the obstetrician not to recommend early weaning and early recourse to the bottle. He is usually in charge of the case for the first few weeks and can be a power for much good in this direction. As soon as you advocate bottle feeding as a substitute for breast feeding you lessen stimulation to the breast and hence there is less breast milk.

AMERICAN ORTHOPEDIC ASSOCIATION

Twenty-second Annual Meeting, held at Hartford, Conn., June 14-16, 1909

(Continued from page 479)

Method of Anchoring Transplanted Tendons

Dr. S. L. McCurdy, Pittsburg, described his method as consisting in wrapping the tendon entirely around the bone, passing it through the ligament, or securing it to some dense or firm tissue, rather than in simply suturing it to the periosteum, thus guaranteeing a firm anchorage after union.

DISCUSSION

Dr. Rugh: I can testify to the value of this method. I think that the less one disturbs the bone from its position the less one will interfere with nutrition and the more quickly there will be union. Formerly I sawed off the ends of the bone squarely, but now I simply saw one side, and then go in through the other way. I have also used the method of having a hole through the end of the drill, as well as the wooden screws. I have never had any harm result from using silver wire.

Dr. Wilson: I think that many of the objections to silver wire lie in the quality of the metal used. Iron always produces irritation by corroding and requires removal in a few weeks.

Dr. McCurdy: I have been taking *x*-ray pictures from time to time, and I find that the shadow cast by the wire is growing less, showing that it is being disintegrated and will gradually disappear.

Unusual Cases of Caries of the Spine in Adults

Dr. E. G. Brackett, Boston, considered some of the special features of this condition and the etiology of some of the spinal symptoms. He also made an attempt to classify them into various types for the purpose of study, with reference to a possibly more accurate diagnosis of the location of the part of the vertebra affected.

DISCUSSION

Dr. Clarence L. Starr, Toronto: The picture representing the vertebræ broken down brings to my mind the case of a child that I had under treatment for three years on a Whitman frame in hyperextension. She died of miliary tuberculosis, and the specimen showed no attempt at fusion. This impressed on me that by continued hyperextension we may prevent the fusion of the bones, and that if we succeed it must be by a prolonged treatment with apparatus.

Dr. A. Thorndike: These studies bring out the fact that the process of bony union takes place late in Pott's disease. Until the tuberculous process dies out the bony process will not begin.

Dr. H. L. Taylor: We should be careful about diagnosing spinal neurasthenia until we have excluded with certainty caries of the vertebræ.

Dr. C. Riely: I think that the long duration of the disease in adults without deformity is due to the great amount of mineral salts in them as compared with children.

An Operation for Infantile Cerebral Hemiplegia, With Reports of Two Cases

Dr. Joseph John Nutt, New York, had devised this operation to give prolonged rest to the lower neurons and thereby rest the upper neurons on the hypothesis that the destruction of cerebral tissue due directly to the original lesion was small in comparison with the total area involved. The rest and repair of certain cells directly by the operation should influence indirectly the rest and repair of others.

DISCUSSION

Dr. Cook: How long do you think the interval would be before the nerve grew together again?

Dr. J. J. Nutt: I did not find much information about this in the literature. In one case it was about nine months.

Dr. Rugh: Have there been any beneficial effects in cases of paraplegia or in the diplegic forms of spastic paralysis, and was sensation entirely done away with when motion was arrested?

Dr. J. J. Nutt: Sensation in the small sciatic was entirely paralyzed. A great many cases of diplegia were reported in which more improvement was noted than one would expect from simple tenotomy.

Dr. Baer: In cases of anterior poliomyelitis, in which I tried nerve severing, the effort was to see whether division of the sciatic nerve and the twisting of the nerve on itself would let the neurons spread out and go down the bad paths into the distal portion of the nerve, as well as the good, but the neuron selected the path it had originally gone down.

Dr. Myers: When did the lesion occur?

Dr. J. J. Nutt: The patient was three years old when it occurred and is now thirteen.

Dr. Blodgett: Has the mentality improved?

Dr. Nutt: The nurse tells me she has noticed some.

Dr. E. R. Fisher, New York: In this class of cases we have a condition that can be relieved, but not cured. There is no inflammatory condition, but an irregular cell action, or overaction. By the removal of this sensory irritation the cortex is given a chance to rest. For the time being the muscle is paralyzed, and this gives an opportunity to apply treatment to the opposing muscle, which is weaker than the contracted or spastic muscle. I do not believe that we can expect a return of mental power except in young cases.

Dr. E. Ryerson, Chicago: I have obtained good results by transplanting the hamstrings forward into the patella, the children learning to walk in a year and a half. For the children who are entirely idiotic nothing can be done mentally; for the others a great deal can.

Dr. Bradford: I should like to know whether the injection of curare has been tried to paralyze the nerve.

Dr. Fisher: I have a faint recollection that this was alluded to in a discussion at the last meeting of the American Neurological Association, but that it was not successful.

(*To be continued*)

Medicolegal

Physicians as Witnesses When They Have Not Treated Injured Parties

The Supreme Court of Illinois says, in the personal injury case of Fuhry vs. Chicago City Railway Co., that a physician who has not treated the injured person, but has made an examination to enable him to testify on a trial as to his condition, must base his opinion on objective, and not subjective conditions. He can not relate nor take into consideration the self-serving statements of the injured person made to him, not with reference to his treatment, but with reference to his trial.

With regard to a question asked a physician the object of which was to obtain his opinion as to whether a certain condition could, would, or did result from certain injuries, the court says that the question whether it did so result was for the jury to determine, but, being one not within the knowledge of men of ordinary experience, the opinions of physicians having knowledge of that subject were proper to be considered and did not invade the province of the jury. It was immaterial whether the witness testified that the injury might or could cause the condition or that it did cause it. In any event the testimony was merely the opinion of the witness based on the facts he had testified to. It was still for the jury to determine the truth in regard to those assumed facts, as well as any others which might tend to confirm or modify their reliance on the opinion given.

Life Tables with Reference to Person Engaged in Hazardous Business

The Court of Appeals of Kentucky says, in Louisville & Nashville Railroad Co. vs. McMillen, a personal injury case brought by the latter party, that life tables were properly allowed to be given in evidence to show the plaintiff's expectancy of life. The fact that he was in a hazardous business, and that the tables were based on the expectancy of life of persons in ordinary occupations, should be taken into consideration by the jury; but, after all, the tables were some evidence of the probable duration of life, and perhaps the best evidence that could be obtained on the subject. There was no presumption that he would continue in a dangerous business. His employment might be ended at any time, and so this was only a circumstance to be considered by the jury in determining what weight to give to the life tables.

Cross-Examination as to Frequency of Experts Appearing as Witnesses

The Supreme Court of Illinois says, in the case of McMahon vs. Chicago City Railway Co., where a physician was cross-examined as to how many cases he had testified in as an expert for the street car lines of Chicago, that the extent of an examination along this line is largely within the discretion of the trial court. No definite limit can be prescribed as a rule of law. The weight to be accorded to the opinion of an expert witness depends largely on his means of information and knowledge, as well as his bias and inclination or relation to the parties. It is always competent to show the interest of the witness. The court thinks, however, that the question should have been limited to the number of times the witness had testified for the defendant company.

Alcoholic Medicinal Preparations

Robert Williams, Jr., acting commissioner, states that it is the practice of the office of commissioner of internal revenue, where preparations examined by it are found to be clearly and unmistakably fakes, being chiefly composed of whisky with little or no medication, and where the character of the preparation must be known to the druggist handling same, either by reason of its appearance or by the nature of the demand for it, to require special tax for its sale without any previous notice being given.

This office holds that in a genuine medicine the alcohol should not be more than is necessary for the legitimate purposes of extraction, solution, or preservation, and that the preparation should contain approximately a U. S. P. dose of some medicinal ingredient of recognized value, either alone or in combination with other compatible drugs. Where a substantial effort has been made to introduce medication, without, however, coming up to the standard set by this office, it is the practice to notify the manufacturers and give them an opportunity to change their formulas; and in such cases, while the manufacturer is required to pay special tax on account of the manufacture and sale by himself of such preparations, special tax is not required of retail druggists on account of the sale of the same in good faith for medicinal use only, if the formula is changed, or until after public notice has been given, if the manufacturer declines to make such change.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

July 31

1 *Parasitism and Natural Selection. R. G. Eccles, Brooklyn.
2 Renal Tuberculosis and Its Surgical Treatment. C. G. Cumston, Boston.
3 Etiology and Treatment of Intestinal Hemorrhage. G. M. Niles, Atlanta, Ga.
4 *An American School of Tropical Medicine. I. W. Brewer, Fort Warren, Mass.
5 Case of Parenchymatous Keratitis in Acquired Syphilis. B. Chance, Philadelphia.
6 The General Practitioner as a Dermatologist. B. F. Ochs, New York.

1. **Parasitism and Natural Selection.**—Eccles says that when we study the distribution of parasites in time and place, we find them such as would be a source of stimulation of germplasm, such as is required in a world that is biologically what we live in. Disease may thus yet prove to be a blessing instead of a curse. Ineffective disease in vertebrate and invertebrate animals is a contest of cells with cells, protozoan and protophyton against metazoon for food. Many of the pathogenic micro-organisms discovered infest insects, molluses, fishes and amphibians.

Parasitism is as old as the world, and is found in fossil remains millions of years old; it is hereditary. The sporozoa are entirely parasitic, one form inhabiting the spleen, another the liver and gall-bladder, etc. These parasites have become so specialized that some of them can live only in certain structures and higher forms of animal life. Parasite and host have learned how to repel each other's attacks, the one by secreting special enzymes to dissolve envelopes, the other by the formation of antibodies to hold poisons in abeyance. Immunity is a gaining of structural and poisonous protection through generations of struggle. Disease is an important part of the biotic fight for food and an essential part of the theory of natural selection. Survival and fitness are due to a triumph over disease. There is no other factor so universally present. The first requisite in this struggle is health, and this is possible only among organisms whose progenitors have triumphed over disease, the weaklings having all been destroyed. Climate and isolation predispose to disease, to variation, but neither alone is an efficient cause of variation. Evolution is brought about by the introduction of the abnormal. The nearer we get to the germ-plasm the easier it is to produce changes in adult forms. All organic changes are the result of stimuli, and disease is the greatest form of stimulus.

4. **American School of Tropical Medicine.**—Brewer says that the sanitary administration of our new tropical possessions demand medical officers acquainted with the diseases peculiar to the tropics. The teaching in medical schools gives no knowledge of tropical diseases, and even if such were given there would be no clinical material. There should be established in this country a school of tropical medicine and attached to it should be a hospital in which the needed clinical material should be collected.

Boston Medical and Surgical Journal

July 29

7 Histologic Classification of Tumors. F. B. Mallory, Boston.
8 *Injections of Sea Water in Skin Diseases. C. J. White, Boston.
9 *Psychoses Beginning in the Puerperal States. C. Ricksher, Hathorne, Mass.
10 Education of the Child's Nervous System. A. C. Eastman, Springfield, Mass.
11 Vestibular Nystagmus an [illegible] Sound Perceiving Apparatus. H. F. [illegible] Mass.
12 Isolation of the Bacillus [illegible] Breast Milk of a Woman Ill with the [illegible] ence, Boston.

8. **Injections of Sea Water in Skin Disease.**—Sea water contains the chlorids of sodium, magnesium, calcium and potassium, and the sulphate of magnesium. These salts have different and opposite effects, i. e., sodium chlorid is a stimulant to nerves and muscles, while the magnesium, calcium and potassium salts are inhibitory in their actions. Mayer describes these opposing forces in the case of one of the medusæ whose pulsations are produced by the electrical (?) energy generated, as in a battery, by the action of these various salts.

With this phenomenon as a basis for the possible therapeutic power of sea water the following experiments were undertaken by White: The water was obtained from the ocean about thirty miles south of Woods Hole, Mass., and from a depth of thirty feet, thus insuring a pure, uncontaminated supply. This water was placed in sterile jars and brought to Boston, where it was purified by passing through a Chamberland filter and rendered isotonic with blood serum by the addition of sterile tap water in the proportion of ten parts of the former to twenty-three of the latter. This product was placed in sterile glass ampullæ holding 200 c.c. One end of these receptacles was bent in the form of a hook and the other drawn out into a straight line, and both extremities were sealed.

The injections were made three times a week deep into the buttocks of the patient, who lay on his side and allowed the fluid to run into the tissues by the force of gravity, the ampulla being suspended about three feet above the body and the water passing through a sterile rubber tube and long irido-platinum needle. The rapidity of the injections varied a great deal in the different patients, some requiring at least a half hour to take in 150 c.c. The pain and discomfort attending this maneuver was usually very slight and the only immediate effect was the desire to urinate; while the general after-effects were practically *nil*, although one patient was obliged to take to her bed for twenty-four hours twice on account of chills, fever, lassitude and nausea.

The following cases were so treated: Pemphigus foliaceus; scrofuloderma; psoriasis; eczema seborrhoicum; malingering, varicose ulcers and general fibromatosis; lupus vulgaris (two cases); erythema induration and psoriasis; chronic eczema (three cases); lupus vulgaris and scrofuloderma; scrofuloderma and xeroderma. From the study of these fifteen cases treated by the injections of isotonic sea water, certain conclusions may be drawn:

> 1. This unusual therapeutic measure produces a certain amelioration of symptoms in widely various dermatoses. 2. This improved condition is most conspicuous in tuberculous processes, especially in tuberculous ulcers. 3. As a whole, this therapeutic agent is a great disappointment. 4. Sea water can be injected in surprisingly large amounts, even into children, without causing much pain or other untoward symptoms. 5. Sea water injected into the buttocks causes immediate desire to micturate, a continued easy and sometimes increased number of daily movements of the bowels, as a rule a slight tendency toward increase of bodily weight, and at times a distinct improvement in the well-being of the recipient.

9. **Psychoses in Puerperal State.**—Ricksher says that there is no psychosis which can be strictly called a puerperal psychosis, but there is no doubt that the puerperal states can act as an exciting cause of a psychosis in certain women under certain conditions, which conditions are at present unknown. The mortality of children born of mothers who become insane during pregnancy is very great. The puerperal states may be exciting causes of attacks of manic-depressive insanity in women who have never before been insane, and in women who have had previous attacks of this disease, childbearing is apt to be the exciting cause of another attack. In women suffering from dementia præcox the puerperal states cause an exacerbation of the acute symptoms and cause the psychosis to become more active.

Homicide is comparatively rare among women becoming insane during this period and is more liable to occur in patients suffering from dementia præcox than any other psychosis, while attempts at suicide are less numerous in these cases but are more liable to occur in patients suffering from the depressed form of manic-depressive insanity. Eclampsia and the toxic infections are not more frequent in women who become insane than in women who are normal mentally and these factors are of little moment in any but the toxic deliria. Illegitimate children are not given as the cause of insanity as frequently in this country as in Europe. The reason for this is not determined. Comparatively few women who later become insane show abnormalities in pregnancy, and one can not tell from the character of the pregnancy whether a woman will become insane after labor or during lactation.

New York Medical Journal

July 31

13 Compressed Air Disease from a Clinical Aspect. L. M. Ryan, Brooklyn, N. Y.
14 Erythema Nodosum. H. Fox, Bath, Maine.
15 *Prognostic and Diagnostic Value of the Leucocytes and Differential Count in Acute Abdominal Infection. J. J. Coons and H. O. Bratton, Columbus, Ohio.
16 Frequency of Cancer of the Cervix Uteri. J. A. McGlinn, Philadelphia.
17 *Common American Foods. H. S. Greenbaum, Baltimore.
18 *Treatment of Epistaxis. B. Robinson, New York.
19 A Criticism of the Usual Surgical Treatment of Varicocele of the Broad Ligament. S. E. Tracy, Philadelphia.
20 Notes on Rhus Toxicodendron. W. W. Ford, Baltimore.

15. **Leucocytes and Differential Count.**—Coons and Bratton report 184 cases of acute appendicitis in which the blood examination was made a few hours previous to operation, except in a few instances in which the patient died before operation or there was a delay for some reason. Following a scheme of Noehren, of New York, the cases were divided into five groups: 1, acute suppurative appendicitis, inflammation confined to appendix; 2, gangrene; 3, abscess; 4, perforation, local peritonitis; 5, spreading peritonitis—the infection not confined by adhesions; 6, general peritonitis. Of the cases of acute suppurative appendicitis, twenty-six out of forty-one had a polynuclear count between 80 and 90; in one instance the polynuclears were 91 per cent. The leucocytes varied between 10,000 and 20,000 in thirty-four of the forty-one cases. In cases with abscess, thirty out of the sixty-two cases had polynuclears from 80 to 85 per cent. There were seventeen cases below 80 per cent.; thirteen, from 85 to 90 per cent.; two, above 90 per cent.

Of twenty-two cases of gangrene, ten had from 85 to 90 per cent. polynuclears. The leucocytes in no instance ran above 25,000; in four cases the white cells were not increased. Of the cases of perforation with local peritonitis, and spreading peritonitis, thirty-six out of forty-five cases showed polynuclears between 85 and 95 per cent. The leucocytes ranged, irregularly, from 10,000 to 49,000. Four cases with very high total leucocyte counts were found. One case with perforation, 40,000 and 91 per cent. The second, an abscess, with 40,300 and 89.3 per cent. The third, a case with free pus in the abdomen, not walled off by adhesions, 40,000 leucocytes, 89.9 per cent. polynuclears. The fourth, a case of spreading peritonitis, with 49,000 leucocytes and 85.6 per cent. polynuclears. The body resistance in these cases, as indicated by the high total leucocyte count, was unusually good, while the degree of infection, revealed by the percentage of polynuclears, was rather mild. These patients had a plus resistance or a falling line. They make good recoveries. The authors summarize their findings as follows:

Polynuclears below 75 per cent.: If there is a leucocytosis, one may look for an old infection, well walled off, may be an acute exacerbation. Usually there is a mild secondary anemia.

Polynuclears, from 75 to 80 per cent.: Indefinite; the history of the case and the patient should be considered. In our series
from 75 to 80 per cent.; 15 were ab-
appendicitis.
85 per cent.: The patient is in no
total leucocyte count is low, suggesting a poor resistance. If the leucocytes are increasing, an immediate operation should be advised if the relation of the polynuclears to the total leucocyte count indicates a good resistance. If the leucocytes remain stationary or decline, the surgeon should rely on the physical signs in making up his mind when to operate.

Polynuclears, from 85 to 90 per cent.: Look for a severe infection. If there is a proper leucocytosis, according to the chart, an immediate operation is indicated.

Polynuclears, above 90 per cent.: Virulent infection, grave prognosis. Twenty-five of our 31 cases above 90 per cent. had some form of peritonitis. Where there is no increase in the leucocytes, and the polynuclears high, little hope can be entertained for the patient from an operation.

17. **Common American Foods.**—Greenbaum has calculated the fuel value (calories) of a certain number of American foods per ounce (avoirdupois), utilizing almost entirely the results obtained by the United States Department of Agriculture, and in particular Bulletin No. 28 (revised edition), by W. O. Atwater and A. P. Bryant. He also submitted a few sample diets for patients suffering from obesity, which can easily be modified to the individual needs by utilizing his table. Personally, he prefers to use six meals a day, the usual breakfast, luncheon and dinner, with three small feedings between them. This has the advantage of preventing undue weakness and excessive desire for food at the main meals.

18. **Treatment of Epistaxis.**—Robinson favors plugging the nasal passages by taking a strip of aseptic, absorbent cotton, and twisting it round and round, so that it becomes about the size of the little finger, and then with a good light, a nasal speculum, and a director or stiff probe, fill the lower and middle meatus as far back as the posterior pharynx. After twenty-four or forty-eight hours the plug or plugs begin to loosen by reason of the nasal secretions produced and absorbed, and they should be carefully withdrawn and fresh ones substituted, if necessary.

Lancet-Clinic, Cincinnati

July 31

21 Obstetric Indications for, and Methods of, Artificial Dilatation of the Cervix. W. D. Porter, Cincinnati.
22 School Hygiene of the Eye. J. Wyler, Cincinnati.
23 Flexner's Antimeningitis Serum in the Treatment of Epidemic Cerebrospinal Meningitis. H. Woolerey, Indianapolis, Ind.

American Journal of Medical Sciences, Philadelphia

July

24 *Therapeutic Value of Calcium Salts in Gastric Tetany. F. P. Kinnicutt, New York.
25 *Common Modification of the First Sound of the Normal Heart Simulating that Heard with Mitral Stenosis. H. Sewall, Denver, Colo.
26 Gastrointestinal Autointoxication. J. Kaufmann, New York.
27 Acquired Chronic Acholuric Jaundice, with a Blood Picture at One Time Resembling that of Pernicious Anemia. F. P. Weber, London.
28 *Means by Which Infectious Diseases are Transmitted. A. H. Doty, New York.
29 Uncinariasis in Panama. G. H. Whipple, Baltimore.
30 Malignant New Growth in Childhood. W. A. Edwards, Philadelphia.
31 Viperine Snake Bite (of Undetermined Kind) Treated with Calmette's Sérum Antivénimeux (or Antivenim). W. F. Arnold, U. S. Navy.
32 Solitary Tuberculosis of the Breast. E. M. von Eberts, Montreal.
33 *Tuberculous Pulmonary Cavities in Infants. C. Y. White and H. C. Carpenter, Philadelphia.
34 Two Cases of Myxedema. R. L. Pitfield, Philadelphia.
35 *Fatal Anemia of Unknown Cause in a Child of Five Years, with Unusual Cells in the Blood. W. W. Barker, Dorchester, Mass.
36 Ocular Complications of Nasal Sinus Disease. A. Knapp, New York.
37 *Cammidge Reaction in Experimental Lesions of the Pancreas. J. Speese and E. H. Goodman, Philadelphia.
38 The Tonsils as Eliminative Organs. W. S. Ashhurst, Chihuahua, Mexico.

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Journal of Experimental Medicine, Lancaster, Pa.

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Homicide is comparatively rare among women becoming insane during this period and is more liable to occur in patients suffering from dementia præcox than any other psychosis, while attempts at suicide are less numerous in these cases but are more liable to occur in patients suffering from the depressed form of manic-depressive insanity. Eclampsia and the toxic infections are not more frequent in women who become insane than in women who are normal mentally and these factors are of little moment in any but the toxic deliria. Illegitimate children are not given as the cause of insanity as frequently in this country as in Europe. The reason for this is not determined. Comparatively few women who later become insane show abnormalities in pregnancy, and one can not tell from the character of the pregnancy whether a woman will become insane after labor or during lactation.

New York Medical Journal

July 31

13 Compressed Air Disease from a Clinical Aspect. L. M. Ryan, Brooklyn, N. Y.
14 Erythema Nodosum. H. Fox, Bath, Maine.
15 *Prognostic and Diagnostic Value of the Leucocytes and Differential Count in Acute Abdominal Infection. J. J. Coons and H. O. Bratton, Columbus, Ohio.
16 Frequency of Cancer of the Cervix Uteri. J. A. McGlinn, Philadelphia.
17 *Common American Foods. H. S. Greenbaum, Baltimore.
18 *Treatment of Epistaxis. B. Robinson, New York.
19 A Criticism of the Usual Surgical Treatment of Varicocele of the Broad Ligament. S. E. Tracy, Philadelphia.
20 Notes on Rhus Toxicodendron. W. W. Ford, Baltimore.

15. **Leucocytes and Differential Count.**—Coons and Bratton report 184 cases of acute appendicitis in which the blood examination was made a few hours previous to operation, except in a few instances in which the patient died before operation or there was a delay for some reason. Following a scheme of Noehren, of New York, the cases were divided into five groups: 1, acute suppurative appendicitis, inflammation confined to appendix; 2, gangrene; 3, abscess; 4, perforation, local peritonitis; 5, spreading peritonitis—the infection not confined by adhesions; 6, general peritonitis. Of the cases of acute suppurative appendicitis, twenty-six out of forty-one had a polynuclear count between 80 and 90; in one instance the polynuclears were 91 per cent. The leucocytes varied between 10,000 and 20,000 in thirty-four of the forty-one cases. In cases with abscess, thirty out of the sixty-two cases had polynuclears from 80 to 85 per cent. There were seventeen cases below 80 per cent.; thirteen, from 85 to 90 per cent.; two, above 90 per cent.

Of twenty-two cases of gangrene, ten had from 85 to 90 per cent. polynuclears. The leucocytes in no instance ran above 25,000; in four cases the white cells were not increased. Of the cases of perforation with local peritonitis, and spreading peritonitis, thirty-six out of forty-five cases showed polynuclears between 85 and 95 per cent. The leucocytes ranged, irregularly, from 10,000 to 49,000. Four cases with very high total leucocyte counts were found. One case with perforation, 40,000 and 91 per cent. The second, an abscess, with 40,300 and 89.3 per cent. The third, a case with free pus in the abdomen, not walled off by adhesions, 40,000 leucocytes, 89.9 per cent. polynuclears. The fourth, a case of spreading peritonitis, with 49,000 leucocytes and 85.6 per cent. polynuclears. The body resistance in these cases, as indicated by the high total leucocyte count, was unusually good, while the degree of infection, revealed by the percentage of polynuclears, was rather mild. These patients had a plus resistance or a falling line. They make good recoveries. The authors summarize their findings as follows:

> Polynuclears below 75 per cent.: If there is a leucocytosis, one may look for an old infection, well walled off, may be an acute exacerbation. Usually there is a mild secondary anemia.
>
> Polynuclears, from 75 to 80 per cent.: Indefinite; the history of the case and the patient should be considered. In our series of [illegible] from 75 to 80 per cent.; 15 were absce[illegible] appendicitis.
>
> [illegible] 85 per cent.: The patient is in no immediate danger unless the total leucocyte count is low, suggesting a poor resistance. If the leucocytes are increasing, an immediate operation should be advised if the relation of the polynuclears to the total leucocyte count indicates a good resistance. If the leucocytes remain stationary or decline, the surgeon should rely on the physical signs in making up his mind when to operate.
>
> Polynuclears, from 85 to 90 per cent.: Look for a severe infection. If there is a proper leucocytosis, according to the chart, an immediate operation is indicated.
>
> Polynuclears, above 90 per cent.: Virulent infection, grave prognosis. Twenty-five of our 31 cases above 90 per cent. had some form of peritonitis. Where there is no increase in the leucocytes, and the polynuclears high, little hope can be entertained for the patient from an operation.

17. **Common American Foods.**—Greenbaum has calculated the fuel value (calories) of a certain number of American foods per ounce (avoirdupois), utilizing almost entirely the results obtained by the United States Department of Agriculture, and in particular Bulletin No. 28 (revised edition), by W. O. Atwater and A. P. Bryant. He also submitted a few sample diets for patients suffering from obesity, which can easily be modified to the individual needs by utilizing his table. Personally, he prefers to use six meals a day, the usual breakfast, luncheon and dinner, with three small feedings between them. This has the advantage of preventing undue weakness and excessive desire for food at the main meals.

18. **Treatment of Epistaxis.**—Robinson favors plugging the nasal passages by taking a strip of aseptic, absorbent cotton, and twisting it round and round, so that it becomes about the size of the little finger, and then with a good light, a nasal speculum, and a director or stiff probe, fill the lower and middle meatus as far back as the posterior pharynx. After twenty-four or forty-eight hours the plug or plugs begin to loosen by reason of the nasal secretions produced and absorbed, and they should be carefully withdrawn and fresh ones substituted, if necessary.

Lancet-Clinic, Cincinnati

July 31

21 Obstetric Indications for, and Methods of, Artificial Dilatation of the Cervix. W. D. Porter, Cincinnati.
22 School Hygiene of the Eye. J. Wyler, Cincinnati.
23 Flexner's Antimeningitis Serum in the Treatment of Epidemic Cerebrospinal Meningitis. H. Woolerey, Indianapolis, Ind.

American Journal of Medical Sciences, Philadelphia

July

24 *Therapeutic Value of Calcium Salts in Gastric Tetany. F. P. Kinnicutt, New York.
25 *Common Modification of the First Sound of the Normal Heart Simulating that Heard with Mitral Stenosis. H. Sewall, Denver, Colo.
26 *Gastrointestinal Autointoxication.* J. Kaufmann, New York.
27 Acquired Chronic Acholuric Jaundice, with a Blood Picture at One Time Resembling that of Pernicious Anemia. F. P. Weber, London.
28 *Means by Which Infectious Diseases are Transmitted. A. H. Doty, New York.
29 Uncinariasis in Panama. G. H. Whipple, Baltimore.
30 Malignant New Growth in Childhood. W. A. Edwards, Philadelphia.
31 Viperine Snake Bite (of Undetermined Kind) Treated with Calmette's Sérum Antivénimeux (or Antivenim). W. F. Arnold, U. S. Navy.
32 Solitary Tuberculosis of the Breast. E. M. von Eberts, Montreal.
33 *Tuberculous Pulmonary Cavities in Infants. C. Y. White and H. C. Carpenter, Philadelphia.
34 Two Cases of Myxedema. R. L. Pitfield, Philadelphia.
35 *Fatal Anemia of Unknown Cause in a Child of Five Years, with Unusual Cells in the Blood. W. W. Barker, Dorchester, Mass.
36 Ocular Complications of Nasal Sinus Disease. A. Knapp, New York.
37 *Cammidge Reaction in [illegible] of the Pancreas. J. Speese and E. H. [illegible]
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47. **Standardization of Antimeningitis Serum.**—It is proposed to employ the specific opsonin present in antimeningitis serum as a measure of the therapeutic power of the serum; for the present a definite and suitable strength in opsonins should be adopted as a standard for antimeningitis serum and a minimum dilution activity of a 1 to 5,000 dilution of the serum is proposed as such. The specific meningococco-opsonin appears to be stable under proper refrigeration of the serum, so that the test may prove applicable also for commercial antimeningitis serum.

Journal of the Indiana State Medical Association, Fort Wayne

July

49 National Department of Public Health from an Indiana Viewpoint. C. A. L. Reed, Cincinnati, Ohio.
50 The Physician and His Avocation. F. R. Charlton, Indianapolis.
51 Acute and Chronic Gonorrheas Treated with Gonococcic Vaccine as an Adjunct to Routine Treatment. F. S. Crockett, Lafayette.
52 Mastoiditis Complicated with Acute Circumscribed Extradural Abscess. J. J. Kyle, Indianapolis.
53 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.
54 Appendicitis. B. Van Sweringen, Fort Wayne.
55 Tuberculosis of the Kidney. W. S. Ehrich, Evansville.

Memphis Medical Monthly

June

56 Résumé of the Progress Toward a "No Mortality Appendicitis." J. A. Crisler, Memphis.
57 Head Injuries. A. G. Payne, Greenville, Miss.
58 Dysentery in Infants and Children. A. G. Jacobs, Memphis.
59 The "Simple" Mastoid Operation. R. McKinney, Memphis.
60 How Are We Responsible for the Transmission and Dissemination of Typhoid Infection? J. R. Nelson, Whiteville.

Journal of Medical Research, Boston, Mass.

July

61 *Further Studies on the Phenomenon of Anaphylaxis. J. F. Anderson and M. J. Roser [illegible]
62 Neurophysiologic Effects of [illegible] F. P. Gay, E. E. Southard, Dan[illegible] zGerald, Boston.
63 An Attempt to Show Specific Racial Differences in Human Blood by Means of the Reaction of Fixation. J. G. FitzGerald, Boston.
64 The Mechanism of the Neutralization of Cobra Venom by Its Antitoxin. A. Calmette, Lille, France.
65 Agglutination of Human and Rabbit Blood Corpuscles by Crotalus Venom. J. McFarland and P. G. Weston, Philadelphia.
66 Gas Production of Bacillus Coli. F. G. Keyes.
67 *Bacteriology of the Blood in Convalescence from Typhoid, with a Theory of the Pathogenesis of the Disease. W. Coleman and B. H. Buxton, New York City.
68 Morphologic Changes in Nerve Cells Resulting from Overwork in Relation with Experimental Anemia and Shock. D. H. Dolley.
69 Further Studies on Fatal Septicemia in Young Chickens, or "White Diarrhea." L. F. Rettger.
70 Ligation of the Parathyroid Artery in the Dog. R. L. Thompson, W. E. Leighton and J. L. Swarts, St. Louis, Mo.
71 Transplantation of the Parathyroid Glandules, with Special Reference to the Result of Bone Operation on Tetany Parathyreopriva. R. L. Thompson, W. E. Leighton and J. L. Swarts, St. Louis.

61. See editorial, The Journal, July 31, 1909, p. 34.

67. **Typhoid.**—The results of this investigation support the view that the bacillemia of typhoid, as a rule, disappears at or about the time that convalescence begins. The theory of the authors in regard to the genesis of typhoid is briefly as follows: The entrance point is the lymphatic structures of the intestines, from which the bacilli enter the general lymphatic system and spleen, where they grow, and only relatively few are destroyed. During the incubation a limited number of bacilli may enter the blood but when the development of the bacilli reaches a certain point they enter the blood in large numbers and are then destroyed with liberation of endotoxins, the symptoms representing the reaction on the part of the host. As the disease advances in the typical case of typhoid progressing to recovery, the growth of bacilli in the organs is greatly arrested by the reactive processes of the host, fewer bacilli enter the blood, the symptoms diminish in severity. In fatal cases the growth of bacilli proceeds unchecked and the symptoms are not restrained, becoming perhaps even more intense. At or about the time of defervescence in the attack of typhoid, the bacilli practically disappear from the blood; the symptoms now come to an end and the convalescence proceeds nicely. In instances in which there is an intermittent fever not due to complication it is probable that the growth of bacilli in organs has not been checked and a limited number continue to enter the blood.

Journal of the South Carolina Medical Association, Florence

June

72 Urogenital Tuberculosis. B. Lewis, St. Louis.
73 Intraperitoneal Infusion of Normal Salt Solution. A. B. Knowlton, Columbia.
74 Things Doctors Should Know About Milk. F. A. Coward, Columbia.
75 Diuresis Dependent on Circulatory Changes. J. Forrest, Charleston.
76 Some Modifications of the Clinical Course of Acute Lobar Pneumonia. R. Wilson, Jr., Charleston, S. C.

Ohio State Medical Journal, Columbus

July 15

77 The Law and the Prophets. C. Pope, Louisville, Ky.
78 The Technic of the Modern Radical Mastoid Operation, with Sinus Thrombosis Complication. F. Allport, Chicago.
79 Diagnosis of Syphilis. M. L. Heidingsfeld, Cincinnati.
80 Binding of the Complement in the Diagnosis and Therapy of Syphilis. C. W. McGavran, Columbus.
81 Brown-Séquard Syndrome and Its Present Status. D. I. Wolfstein, Cincinnati.
82 A Plea for Higher Ethical Standards. A. S. Barnes, Columbus.

Journal of the Kansas Medical Society, Kansas City

July

83 Treatment of Fractures of Patella. G. M. Gray, Kansas City.
84 Cancer of the Female Breast. J. N. Jackson, Kansas City, Mo.
85 A Clinical and Bacteriologic Study of 41 Consecutive Cases of Diphtheria. E. E. Wuttke, Halsted, Kan.

Ophthalmic Record, Chicago

July

86 Roentgen Ray Flashes or Intermittent X-Rays in Treatment of Eye Diseases, with Report of Cases. D. H. Coover, Denver.
87 *An Analytic Criticism on the Cardinal Lid Symptoms in Exophthalmic Goiter (Basedow's Disease). G. F. Suker, Chicago.
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American Journal of Urology, New York

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47. **Standardization of Antimeningitis Serum.**—It is proposed to employ the specific opsonin present in antimeningitis serum as a measure of the therapeutic power of the serum; for the present a definite and suitable strength in opsonins should be adopted as a standard for antimeningitis serum and a minimum dilution activity of a 1 to 5,000 dilution of the serum is proposed as such. The specific meningococco-opsonin appears to be stable under proper refrigeration of the serum, so that the test may prove applicable also for commercial antimeningitis serum.

Journal of the Indiana State Medical Association, Fort Wayne

July

49 National Department of Public Health from an Indiana Viewpoint. C. A. L. Reed, Cincinnati, Ohio.
50 The Physician and His Avocation. F. R. Charlton, Indianapolis.
51 Acute and Chronic Gonorrheas Treated with Gonococcic Vaccine as an Adjunct to Routine Treatment. F. S. Crockett, Lafayette.
52 Mastoiditis Complicated with Acute Circumscribed Extradural Abscess. J. J. Kyle, Indianapolis.
53 Sketches of the Medical History of Indiana. G. W. H. Kemper, Muncie.
54 Appendicitis. B. Van Sweringen, Fort Wayne.
55 Tuberculosis of the Kidney. W. S. Ehrich, Evansville.

Memphis Medical Monthly

June

56 Résumé of the Progress Toward a "No Mortality Appendicitis." J. A. Crisler, Memphis.
57 Head Injuries. A. G. Payne, Greenville, Miss.
58 Dysentery in Infants and Children. A. G. Jacobs, Memphis.
59 The "Simple" Mastoid Operation. R. McKinney, Memphis.
60 How Are We Responsible for the Transmission and Dissemination of Typhoid Infection? J. R. Nelson, Whiteville.

Journal of Medical Research, Boston, Mass.

July

61 *Further Studies on the Phenomenon of Anaphylaxis. J. F. Anderson and M. J. Rosenau, Washington, D. C.
62 Neurophysiologic Effects of Anaphylactic Intoxication. F. P. Gay, E. E. Southard, Danvers, Mass., and J. G. FitzGerald, Boston.
63 An Attempt to Show Specific Racial Differences in Human Blood by Means of the Reaction of Fixation. J. G. FitzGerald, Boston.
64 The Mechanism of the Neutralization of Cobra Venom by Its Antitoxin. A. Calmette, Lille, France.
65 Agglutination of Human and Rabbit Blood Corpuscles by Crotalus Venom. J. McFarland and P. G. Weston, Philadelphia.
66 Gas Production of Bacillus Coli. F. G. Keyes.
67 *Bacteriology of the Blood in Convalescence from Typhoid, with a Theory of the [illegible] Disease. W. Coleman and B. H. Buxt[illegible]
68 Morphologic Changes in N[illegible] from Overwork in Relation with Experimental Anemia and Shock. D. H. Dolley.
69 Further Studies on Fatal Septicemia in Young Chickens, or "White Diarrhea." L. F. Rettger.
70 Ligation of the Parathyroid Artery in the Dog. R. L. Thompson, W. E. Leighton and J. L. Swarts, St. Louis, Mo.
71 Transplantation of the Parathyroid Glandules, with Special Reference to the Result of Bone Operation on Tetany Parathyreopriva. R. L. Thompson, W. E. Leighton and J. L. Swarts, St. Louis.

61. See editorial, The Journal, July 31, 1909, p. 34.

67. **Typhoid.**—The results of this investigation support the view that the bacillemia of typhoid, as a rule, disappears at or about the time that convalescence begins. The theory of the authors in regard to the genesis of typhoid is briefly as follows: The entrance point is the lymphatic structures of the intestines, from which the bacilli enter the general lymphatic system and spleen, where they grow, and only relatively few are destroyed. During the incubation a limited number of bacilli may enter the blood but when the development of the bacilli reaches a certain point they enter the blood in large numbers and are then destroyed with liberation of endotoxins, the symptoms representing the reaction on the part of the host. As the disease advances in the typical case of typhoid progressing to recovery, the growth of bacilli in the organs is greatly arrested by the reactive processes of the host, fewer bacilli enter the blood, the symptoms diminish in severity. In fatal cases the growth of bacilli proceeds unchecked and the symptoms are not restrained, becoming perhaps even more intense. At or about the time of defervescence in the attack of typhoid, the bacilli practically disappear from the blood; the symptoms now come to an end and the convalescence proceeds nicely. In instances in which there is an intermittent fever not due to complication it is probable that the growth of bacilli in organs has not been checked and a limited number continue to enter the blood.

Journal of the South Carolina Medical Association, Florence

June

72 Urogenital Tuberculosis. B. Lewis, St. Louis.
73 Intraperitoneal Infusion of Normal Salt Solution. A. B. Knowlton, Columbia.
74 Things Doctors Should Know About Milk. F. A. Coward, Columbia.
75 Diuresis Dependent on Circulatory Changes. J. Forrest, Charleston.
76 Some Modifications of the Clinical Course of Acute Lobar Pneumonia. R. Wilson, Jr., Charleston, S. C.

Ohio State Medical Journal, Columbus

July 15

77 The Law and the Prophets. C. Pope, Louisville, Ky.
78 The Technic of the Modern Radical Mastoid Operation, with Sinus Thrombosis Complication. F. Allport, Chicago.
79 Diagnosis of Syphilis. M. L. Heidingsfeld, Cincinnati.
80 Binding of the Complement in the Diagnosis and Therapy of Syphilis. C. W. McGavran, Columbus.
81 Brown-Séquard Syndrome and Its Present Status. D. I. Wolfstein, Cincinnati.
82 A Plea for Higher Ethical Standards. A. S. Barnes, Columbus.

Journal of the Kansas Medical Society, Kansas City

July

83 Treatment of Fractures of Patella. G. M. Gray, Kansas City.
84 Cancer of the Female Breast. J. N. Jackson, Kansas City, Mo.
85 A Clinical and Bacteriologic Study of 41 Consecutive Cases of Diphtheria. E. E. Wuttke, Halsted, Kan.

Ophthalmic Record, Chicago

July

86 Roentgen Ray Flashes or Intermittent X-Rays in Treatment of Eye Diseases, with Report of Cases. D. H. Coover, Denver.
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health is yet able to protect against new infection, unless the opportunities for new infection are so numerous and the infection so intense that it overcomes the influence of the protecting immunization. A slight early tuberculous process thus protects the individual against mild new infection. The tuberculous individual reacts to severe new infection by the development of slow phthisis, while the normal individual under the same conditions reacts with acute miliary tuberculosis. The aim in prophylaxis should be to avoid severe new infection. This can be done by restricting the opportunities for family and house infection, or by protective vaccination, or by preventing autoinfection from the already tuberculous organism, or by these combined. Some stereoscopic views of the findings in the lungs of the guinea-pigs are given to show the difference between the reaction to new infection in the normal and the infected lungs.

43. **Prophylaxis of the Mechanical Predisposition of the Apices to Tuberculosis.**—Koch has practiced in the tropics and has been impressed with the remarkable development of the chest in native races, its broad outlines and expansion, all in such contrast to the narrow, almost concave chest of civilized peoples. He is convinced that this difference is the result of habits of clothing and schooling, and that until these are changed no effectual prophylaxis against the "white plague" is possible. He declares that the imagination can not conceive of any article better adapted to check the development of the chest of the child and the lungs within than the suspenders and skirt supporters worn by children nowadays. The shoulders and upper part of the lungs are compressed by them, and this pressure keeps up all day long, the weight of things in the pockets adding to the drag on the shoulders. The supporters over the shoulders are held down as the child sits on the trousers or skirts. The bones, cartilages, muscles and lungs are kept constantly compressed and are thus unable to develop and the compressed portion of the lungs and apex thus remains a place of lesser resistance all through life. The effect of compression on liver and kidneys from the wearing of corsets, and the influence of immobilization on the healing of fractures and pleurisy, demonstrate the great influence of external agencies on the development of parts and organs beneath. Injury from the clothing is supplemented by injury from long sitting in school, the bad air and the lack of opportunities for oxidation processes in the body cells. The heart also suffers from the lack of development of the chest and a vicious circle is set up. He concludes his article with an appeal for space in the growing lungs, freedom for the apices and shoulders, and more out of door air and exercise.

44. **Diazoreaction in Tuberculosis.**—Gwerder emphasizes the importance of the diazoreaction in pulmonary tuberculosis as it gives valuable information in many cases in regard to the intensity and probable course of the disease. The test should be repeated several times as single findings are not conclusive.

45. Abstracted in The Journal, July 4, 1908, p. 72.

47. **Hemoptysis as Early Symptom of Pulmonary Tuberculosis.**—Müller states that hemoptysis was an early symptom in 170 of the 875 tuberculous patients at the Davos German Sanatorium during the last four years. Early hemoptysis was twice as frequent in the male as in the female patients, but none of them displayed a greater tendency to hemorrhage later than other groups of patients. The alarm from the early hemoptysis generally has a salutary effect, as vigorous treatment is instituted earlier. After nine months or a year in the sanatorium full earning capacity was restored in 71 patients and partial in 60 others; one patient succumbed to miliary tuberculosis.

Münchener medizinische Wochenschrift

June 29, LVI, No. 26, pp. 1313-1360

49 Practical Value of Complement-Binding Reaction. H. Lüdke.
50 *Microbes in Normal Organs. (Keimgehalt normaler Organe.) H. Conradi.
51 Electric Injuries. (Verletzungen durch den elektrischen Strom.) Oberst.
52 *Importance of Intraperitoneal Hemorrhage in Stab and Firearm Wounds of the Intestines. (Bedeutung der intraperitonealen Blutung bei penetrierenden Darmverletzungen.) Gutzeit.
53 Moro's Tuberculin Salve Reaction. (Morosche Salbenreaction.) Bullinger.
54 Dilatation or Tumor of the Heart. (Herzdilatation oder Herztumor.) Schott.
55 Modification of Esbach Albumin Test. (Modifikation der Esbachschen Eiweissprobe.) Kwilecki.
56 *Utilization of Natural Defensive Forces in Treatment of Peritonitis. (Nutzbarmachung der natürlichen Schutzkräfte der [illegible] der Appendizitis und der [illegible] P. Janssen. Commenced [illegible]

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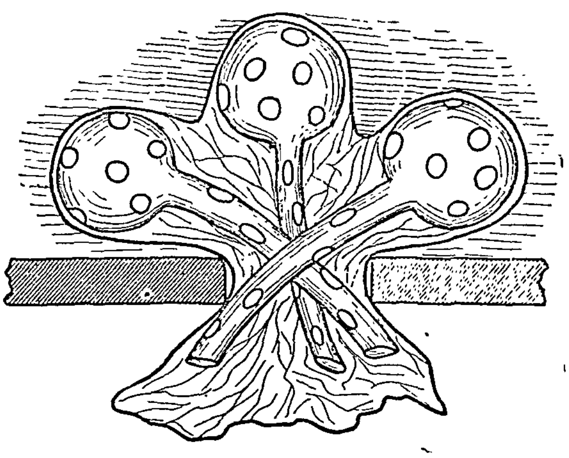

July 14

32 Diagnosis and Treatment of Tuberculous Glands. A. Latham.
33 Trauma in Relation to Malignant Tumors. J. Bland-Sutton.
34 Some Points in the Surgical Treatment of Fracture of the Base of the Skull. L. B. Rawling.

30. **Ectopic Pregnancy.**—Herman claims that the diagnosis of tubal pregnancy before hemorrhage has occurred is impossible. The diagnosis of a tubal mole from some other conditions is difficult, but nearly all the conditions which may reasonably be mistaken for a tubal mole equally require prompt operation. Slight hemorrhage from perforation of a pregnant tube is often accompanied by death of the fetus and rapid absorption of the effused blood. When great intraperitoneal hemorrhage has taken place from perforation of a pregnant tube operation is urgent and simple. The danger from delay in operating is greater than that coming from the inexperience of the operator, if only he be one who understands antisepsis. After perforation of a pregnant tube the amnion may protrude into the peritoneal cavity, and the child grow free among the bowels, covered only by its amnion. In that case the placenta, as it grows, may become implanted on almost any abdominal viscus, and cover a large area. In such cases it is probable that after the primary preparation the mother runs hardly any risk until after the death of the child. In such cases, operation while the child is viable is an extremely dangerous one, and is more dangerous the more advanced the pregnancy. The danger is from hemorrhage resulting from separation of the placenta. The experience of more recent operators shows that it is nevertheless safer to remove the placenta than to leave it to come away. The methods of preventing such hemorrhage which have proved successful are: (a) the removal when possible of the viscera to which the placenta is attached; and (b) extensive prophylactic ligature of the arteries supplying the placental site. If the operation is postponed until after the death of the child, some time afterward (unfortunately we know not exactly how long) the circulation through the placenta ceases, and it becomes thrombosed. If an operation is now done the placenta can be peeled off without hemorrhage, and the operation is simple and safe. When the pregnancy is underneath the peritoneum there is danger of rupture at any period of the pregnancy. Therefore in this case the sooner operation is done the better.

Archives de Médecine des Enfants, Paris

July, XII, No. 7, pp. 481-560

35 Portals of Entry for Tuberculosis in Infants. (Portes d'entrée de la tuberculose chez les nourrissons.) V. Hutinel.
36 Anatomic Study of Mongolian Idiots. (Etude anatomique de l'idiotie mongolienne.) L. Babonneix.
37 Constipation in Children from Various Causes. (Classification étiopathogénique des constipations chez l'enfant.) E. Gaujoux.

Presse Médicale, Paris

July 10, XVII, No. 55, pp. 489-496

38 *Diagnosis and Treatment of Insufficiency of the Suprarenals. (Insuffisance surrénale.) E. Sergent.
39 *The Surgical Profession in America. S. Pozzi.

38. **Suprarenal Insufficiency.**—Sergent analyzes the symptoms of suprarenal insufficiency affecting the circulation, the digestion, the nervous system and the general metabolism. The syndrome of suprarenal insufficiency may be slow or acute. *In the chronic form,* of which Addison's disease is the extreme type, if there is no bronzing, it can be rendered manifest by applying a mustard plaster which draws the pigment to the surface. The tuberculous process in the suprarenals in this disease is almost always primary, and these glands are rarely affected even with advanced tuberculosis in other organs. Without the bronzing, the syndrome suggests pernicious anemia, leukemia or latent cancer, especially the weakness, the low blood pressure, the loss of appetite, the constipation, vomiting, anemia and progressive emaciation. The acute form may simulate a fulminating poisoning, peritonitis, meningitis, apoplectiform coma, etc., and it may be suspected when the febrile and other phenomena of an infectious disease are suddenly supplanted by signs of depression, small, unstable pulse, subnormal temperature and arterial tension. He is convinced that the "white line"-is pathognomonic of suprarenal insufficiency and it may prove very instructive in cases of sudden death from this cause in which circumstances indicate possible poisoning or violence. Besides trauma, an operation or even a pregnancy may *bring on this acute insufficiency* on the part of the suprarenals. Treatment should aim to prevent the development of the acute phase or exacerbations in persons already affected with the chronic form. They should avoid exertions and contact with persons suffering from infectious diseases and should refrain from toxic drugs, especially from arsenic, which is a violent poison in case of suprarenal insufficiency, and they should not permit any surgical operations unless for vital necessity. On the other hand, they will derive benefit from phosphates and especially from lecithin. Antisyphilitic treatment should be instituted if there is a possibility of a syphilitic origin, but the mercury and iodid must be managed with great care as they are liable to prove poisonous for the suprarenal capsule. Suprarenal organotherapy is useful both for differentiation and cure, and he has witnessed the entire subsidence of the Addison syndrome, including the disappearance of the "white line" under the influence of suprarenal medication. Fresh glands from young calves may be used, the patient ingesting from 1.5 to 2 gm. a day up to 5 gm., or the dry extract can be taken. This is kept up for ten or twelve days, then suspended for two or three, and then recommenced. As a rule, he prefers the extract of the whole gland, but he sometimes uses adrenalin. He has found this particularly useful in infectious diseases when he suspected suprarenal involvement. Signs of cardiovascular weakness subside under the influence of the adrenalin, and the white line vanishes and reappears parallel with the fluctuations of the pulse, which he regards as substantial proof of its pathognomonic character. The usual dose is 0.001 gm. a day, but up to 0.006 may be given fractioned in 6 doses, and this, he says, may be kept up for two months. The white line is the opposite of the "red line" of meningitis. The finger is drawn lightly along the skin of the abdomen; in a few seconds the path of the finger shows up as a white stripe, growing more and more distinct and remaining stationary for three or four minutes and then disappearing.

39. See Paris Letter, page 216.

Semaine Médicale, Paris

July 7, XXIX, No. 27, pp. 313-324

40 *Surgical Treatment of Spastic Paralysis. (Traitement chirurgical de la paraplégie spasmodique: l'opération de Foerster.) F. Rose.

July 14, No. 28, pp. 325-336

41 Proper Technic for Pubiotomy; Its Present Status. (Comment éxécuter une pubiotomie?) R. de Bovis.

40. **Surgical Treatment of Spasmodic Paraplegia.**—Rose reviews the fifteen cases on record in which resection of the nerve roots has been attempted in the treatment of this affection, according to Foerster's technic. Two of the patients died, both adults, one from infection of the wound from a preexisting eschar and the other from operative shock. The other patients were remarkably benefited, being restored to active life after years of absolute and hopeless immobility. The literature on the subject is reviewed in detail.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIII, No. 1, pp. 1-144. Last indexed May 1, p. 1466

42 *Immunity of the Tuberculous to Tuberculosis. (Weitere Versuche über Immunität gegen Tuberkulose durch Tuberkulose, zugleich ein Beitrag zur Phthisiogenese.) P. H. Römer.
43 *The Mechanical Predisposition of Lung Apices to Tuberculous Infection. (Mechanische Disposition der Lungenspitzen zur Erkrankung an tuberkulöser Phthise.) F. Koch.
44 *Importance of Diazoreaction for Prognosis of Pulmonary Tuberculosis. J. P. Gwerder.
45 *Specific Aids in Diagnosis and Prognosis of Tuberculosis. S. v. Ruck, Asheville, N. C.
46 Gr [illegible] ndings. (Die graphische [illegible] G. Liebe.
47 *He [illegible] Pulmonary Tuberculosis. (Hämoptoe als Frühsymptom der Lungentuberkulose.) B. Müller.
48 Intracutaneous Tuberculin Test for Diagnostic Purposes (Intrakutanreaktion.) F. Mendel.

42. **Immunity of the Tuberculous to Tuberculosis.**—Römer reports a series of experiments undertaken to determine the power of resistance of tuberculous animals to renewed infection. The results show that spontaneous tuberculosis of a chronic character protects guinea-pigs against renewed infection. The protection is more decided the more chronic the first infection and the longer the interval since the first symptoms. Comparing these results with clinical experience shows that a *first infection which does not affect materially the general*

health is yet able to protect against new infection, unless the opportunities for new infection are so numerous and the infection so intense that it overcomes the influence of the protecting immunization. A slight early tuberculous process thus protects the individual against mild new infection. The tuberculous individual reacts to severe new infection by the development of slow phthisis, while the normal individual under the same conditions reacts with acute miliary tuberculosis. The aim in prophylaxis should be to avoid severe new infection. This can be done by restricting the opportunities for family and house infection, or by protective vaccination, or by preventing autoinfection from the already tuberculous organism, or by these combined. Some stereoscopic views of the findings in the lungs of the guinea-pigs are given to show the difference between the reaction to new infection in the normal and the infected lungs.

43. **Prophylaxis of the Mechanical Predisposition of the Apices to Tuberculosis.**—Koch has practiced in the tropics and has been impressed with the remarkable development of the chest in native races, its broad outlines and expansion, all in such contrast to the narrow, almost concave chest of civilized peoples. He is convinced that this difference is the result of habits of clothing and schooling, and that until these are changed no effectual prophylaxis against the "white plague" is possible. He declares that the imagination can not conceive of any article better adapted to check the development of the chest of the child and the lungs within than the suspenders and skirt supporters worn by children nowadays. The shoulders and upper part of the lungs are compressed by them, and this pressure keeps up all day long, the weight of things in the pockets adding to the drag on the shoulders. The supporters over the shoulders are held down as the child sits on the trousers or skirts. The bones, cartilages, muscles and lungs are kept constantly compressed and are thus unable to develop and the compressed portion of the lungs and apex thus remains a place of lesser resistance all through life. The effect of compression on liver and kidneys from the wearing of corsets, and the influence of immobilization on the healing of fractures and pleurisy, demonstrate the great influence of external agencies on the development of parts and organs beneath. Injury from the clothing is supplemented by injury from long sitting in school, the bad air and the lack of opportunities for oxidation processes in the body cells. The heart also suffers from the lack of development of the chest and a vicious circle is set up. He concludes his article with an appeal for space in the growing lungs, freedom for the apices and shoulders, and more out of door air and exercise.

44. **Diazoreaction in Tuberculosis.**—Gwerder emphasizes the importance of the diazoreaction in pulmonary tuberculosis as it gives valuable information in many cases in regard to the intensity and probable course of the disease. The test should be repeated several times as single findings are not conclusive.

45. Abstracted in The Journal, July 4, 1908, p. 72.

47. **Hemoptysis as Early Symptom of Pulmonary Tuberculosis.**—Müller states that hemoptysis was an early symptom in 170 of the 875 tuberculous patients at the Davos German Sanatorium during the last four years. Early hemoptysis was twice as frequent in the male as in the female patients, but none of them displayed a greater tendency to hemorrhage later than other groups of patients. The alarm from the early hemoptysis generally has a salutary effect, as vigorous treatment is instituted earlier. After nine months or a year in the sanatorium full earning capacity was restored in 71 patients and partial in 60 others; one patient succumbed to miliary tuberculosis.

Münchener medizinische Wochenschrift

June 29, LVI, No. 26, pp. 1313-1360

49 Practical Value of Complement-Binding Reaction. H. Lüdke.
50 *Microbes in Normal Organs. (Keimgehalt normaler Organe.) H. Conradi.
51 Electric Injuries. (Verletzungen durch den elektrischen Strom.) Oberst.
52 *Importance of Intraperitoneal Hemorrhage in Stab and Firearm Wounds of the Intestines. (Bedeutung der intraperitonealen Blutung bei penetrierenden Darmverletzungen.) Gutzeit.
53 Moro's Tuberculin Salve Reaction. (Morosche Salbenreaction.) Bullinger.
54 Dilatation or Tumor of the Heart. (Herzdilatation oder Herztumor.) Schott.
55 Modification of Esbach Albumin Test. (Modifikation der Esbachschen Eiweissprobe.) Kwilecki.
56 *Utilization of Natural Defensive Forces in Treatment of Peritonitis. (Nutzbarmachung der natürlichen Schutzkräfte der Bauchhöhle bei der Behandlung der Appendizitis und der diffusen Perforationsperitonitis.) P. Janssen. Commenced in No. 25.

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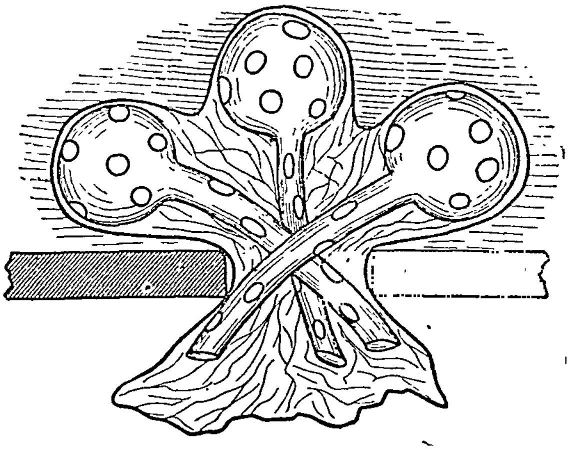

ually reducing the amounts, for six or seven days. The drainage is by hollow glass balls with a long stem studded thick with perforations (see illustration); the balls are from 1 to 3 cm. in diameter. A piece of gauze is fitted into the cavity, as for a Mikulicz tampon, and then the ball drains are introduced, the stems emerging from the operative wound. The patient lies permanently on his right side, thus insuring ample outflow of the fluid. Of equal importance is the supervision of the action of the heart, and digitalis is given systematically before and after the operation, and other stimulants are used at the slightest signs of flagging on the part of the heart. Great stress is also placed on the application of warmth, not only to prevent collapse but to induce active hyperemia in the organs inside the peritoneum and thus promote the activity of the bowels. The heat is applied in the form of hot compresses, poultices or a thermophore. The intestines are also stimulated by introduction of the intestinal tube; drugs are seldom necessary. The treatment of the peritonitis thus begins as soon as the patient returns to his bed after the operation and includes these four important factors: stimulation of the heart action and bowel *functioning, application of heat and copious auto-irrigation* of the abdominal cavity.

Wiener klinische Wochenschrift, Vienna

July 1, XXII, No. 26, pp. 911-948

57 Condensed Human Milk in Infant Feeding. (Ernährungsversuche bei Neugeborenen mit konservierter Frauenmilch.) E. Mayerhofer and E. Pribram.
58 *Non-Diabetic Glycosuria. K. Glaessner.
59 *Improved Instrumental Technic for Gastroenterostomy. (Instrument zur Anlegung von Magen- und Darmanastomosen.) R. Frank.
60 *Improved Technic for Cultivation of Spirochetes. (Untersuchung der Spirochaete pallida mit dem Tuschverfahren.) V Hecht and M. Wilenko.

58. **Non-Diabetic Glycosuria.**—Glaessner discusses glycosuria from hyperglycemia and alimentary glycosuria, the toxic from chemical and thermic injury and bacteria, and the glycosuria of levulosuria, lactosuria, galactosuria, pentosuria and elimination of glucuronic acid. He has noticed that transitory glycosuria from asphyxia, carbon monoxid poisoning and exposure to cold is always accompanied by lactic acid in the urine. He has never detected lactic acid in the urine in diabetes and thinks that this may sometimes aid in differentiation.

59. **Instrument for Anastomosis.**—The two branches of the instrument are inserted separately, one in a buttonhole in the stomach wall, the other in a buttonhole in the loop of the intestine, when gastroenterostomy is contemplated. The branches are thus introduced in opposite directions. The two branches are then brought into juxtaposition and the handles screwed tight together. The serosa of the bowel and stomach is then sutured together, first on one side of the instrument and then on the other. A slender knife is then introduced between the blades and the lumen opened with it, after which the instrument is removed and the buttonholes sutured. Frank claims a number of advantages for this instrument.

60. **India Ink Method for Studying Spirochetes.**—Burri has materially simplified bacteriologic research by his India ink method. A droplet of the fluid to be examined is mixed with a droplet of India ink on an object glass and allowed to dry. Examined then through the microscope the bacteria stand out as with the dark field illumination. Hecht states that the method is particularly useful for examining spirochetes, so that any practitioner in less than a minute can reveal the *Spirochæta pallida* in case of positive findings.

Zentralblatt für Gynäkologie, Leipsic

June 26, XXXIII, No. 26, pp. 897-928

61 *Lactic Acid in Blood and Urine in Epilepsy and Eclampsia. (Ist die Fleischmilchsäure im Blut und Harn bei Epilepsie und Eklampsie eine Folge der Krämpfe?) P. Zweifel.
62 History of Extraperitoneal Cesarean Section. (Zur Geschichte des extraperitonealen Kaiserschnittes.) L. Nürnberger.
63 Parametritis and Posterior Paravaginitis with Heterotopic Proliferation of Epithelium. R. Meyer.

61. **Lactic Acid in the Blood and Urine in Epilepsy and Eclampsia.**—Zweifel has been continuing his study of this subject since he reported the constant finding of lactic acid in the urine in 17 cases of eclampsia. He has found small amounts in the urine in 5 cases of "pregnancy kidney" and large amounts in 3 cases of "pregnancy nephritis." He thinks this finding is important as this latter condition is the preliminary to eclampsia. Examination of the urine of three epileptics showed no trace of lactic acid in one and very little in the other, but in a third case 1.489 gm. of lactic acid were found in 845 c.c. of urine at one time and 3.369 gm. in 505 c.c. at another time. The seizures in this last case were very severe and in the intervals the patient was apathetic. Meat was dropped then from the diet of this epileptic, after which lactic acid could no longer be detected in the urine; there has been no recurrence of seizures and the patient is less apathetic. These findings confirm the assumption that tonic general convulsions are merely a symptom and that epileptic seizures may occur from very different causes.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 1, XXX, No. 78, pp. 817-824

64 *Work of the Heart. (Lavoro del cuore.) T. Silvestri.

July 4, No. 79, pp. 825-840

65 Hemorrhagic Purpura and Acute Aplastic Anemia. U. Deganello.

July 6, No. 80, pp. 842-848

66 *Improved Stain for Detection of Spermatozoa. (Nuovo metodo di colorazione degli spermatozoi nelle macchie.) B. Baecchi.
67 Fracture of Sphenoid Bone from Direct Trauma. (Frattura dello sfenoide da causa diretta.) T. Costa and C. Migliucci.

64. **The Work of the Heart.**—Silvestri relates some experiences and discusses physiologic findings which demonstrate that the mechanical work of the heart is much less than generally assumed, owing to certain mechanical factors which he enumerates. Also that the heart is capable of exertion six or seven times as great as its normal work, and is able to get along without inducing symptoms sometimes when its working capacity is reduced to a fraction of normal.

66. **Stain for Spermatozoa.**—Baecchi states that his technic is extremely simple and rapid, while it shows up the spermatozoa in a few seconds and the stained specimens are durable. A thread of the soiled tissue is placed in a concentrated aqueous solution of acid fuchsin for 25 or 30 seconds; then transferred to a 1 per cent. alcoholic solution of hydrochloric acid in 70 per cent. alcohol for from 10 to 30 seconds, until decolored to a pale pink; it is then placed in absolute alcohol for 15 to 20 seconds. The thread is then transferred to an object glass in a drop of xylol and the fibers separated when it is ready for the microscope. The heads of the spermatozoa show bright red while the thread fibers are decolored or only slightly pinkish. The most perfect specimens are obtained when the thread is first soaked in distilled water for a few hours. A counter stain with methylene blue shows up the spermatozoa even more perfectly.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

SECOND ANNUAL REPORT OF THE COMMISSIONER OF HEALTH OF THE COMMONWEALTH OF PENNSYLVANIA, 1907. Cloth. Pp. 974.

THE BLOOD IN HEALTH AND DISEASE. By R. J. M. Buchanan, M.D., F.R.C.P., Professor of Forensic Medicine in the University of Liverpool. Cloth. Pp. 318, with illustrations. Price, $4.50. New York: Oxford University Press, 1909.

THE THIRTEENTH GREATEST OF CENTURIES. By James J. Walsh, M.D., Ph.D., LL.D., Dean and Professor of the History of Medicine and of Nervous Diseases at Fordham University School of Medicine. Cloth. Edition 2. Pp. 458, with illustrations. Price, $2.50 net. Catholic Summer School Press, 110 W. 74th St., New York City.

THIRD REPORT OF THE WELLCOME RESEARCH LABORATORIES AT THE GORDON MEMORIAL . Andrew Balfour, M.D., B.Sc., F.R.C.P., D.I of the Royal Institute of Public Health. with illustrations. Published for Dept. of Education, Sudan Government, Khartoum, by Baillière, Tindall & Cox, 8, Henrietta St., Covent Garden, London, 1908.

FARMACOPEA DE LOS ESTADOS UNIDOS DE AMÉRICA. Octava Revisión Decenal. Autorizada por la Convención de la Farmacopea de los Estados Unidos. Reunida en Washington el año 1900 A.D. Revisada por el Comité de Revisión y Publicada por la Junta Directiva. Oficial desde Setiembre 1° de 1905 Incluyente Adiciones y Correcciones hasta 1° de Junio 1907. Sheep. Pp. 715. Price, $5.50. Nueva York, N. Y.: Agentes, American Druggist Publishing Co.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LIII CHICAGO, ILLINOIS, AUGUST 21, 1909 NUMBER 8

Address

THE PART SANITATION IS PLAYING IN THE CONSTRUCTION OF THE PANAMA CANAL *

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Colonel, U. S. Army; Chief Sanitary Officer, Isthmian Canal Zone; President, American Medical Association
ANCON, PANAMA

The best way of showing what part sanitation is playing in the present canal work is to point out what the conditions would be if the present methods of sanitation were not in vogue, and then to present conditions as they actually are. The difference between the two pictures will fairly represent what is due to sanitation.

For some years the Isthmus of Panama has had about as bad a reputation for health as any locality in the world. Probably it would not be extreme to say that there is no other place that had as bad a reputation. The English official guide for pilots for the year 1903 made these remarks about the canal district:

> The Panama Canal District is one of the hottest, wettest and most feverish regions in existence. Intermittent and malignant fevers are prevalent, and there is an epidemic of yellow fever at times. The death rate under normal conditions is large.—*West India Pilot*, vol. i, 6th ed., 1903.

The history of the Isthmus amply justifies this reputation. Panama is nine degrees north of the equator. It has a heavy rainfall—about 71.70 inches (a ten years' average) at Ancon on the Pacific side, and 128.37 inches (average for thirty years) at Colon on the Atlantic. The temperature is warm all the year round, sufficiently so for mosquitoes to breed freely in all seasons. From the year 1520 it has been the favorite point in the western hemisphere for transit between the Atlantic and Pacific coasts. Towns of considerable size have been located on the Isthmus since that time. These towns have always had to rely for their water supply on rain water collected in cisterns and barrels. The yellow fever mosquito, the stegomyia, requires a warm climate for its existence; it can not survive frost. For laying its eggs and rearing its larvæ it needs rain water in a protected locality. For the development, then, of this particular species of mosquito the Isthmus of Panama possesses in an eminent degree all the requirements; namely, a warm climate, large rainfall, and towns almost entirely dependent on collected rain water for their supply.

Many other tropical American cities are just as favorably situated for the development of the yellow fever mosquito as is the city of Panama, so we must look for some other element, not present in them, as a cause for the pre-eminent reputation which the Isthmus of Panama has obtained as a yellow fever center. Wherever yellow fever prevails endemically the native population becomes immune to the disease. This is generally explained by saying that the native, as a child, has a mild attack of the disease which protects him in after-life. It is a fact that an attack of yellow fever gives the individual entire protection—about as much so as does an attack of smallpox. Therefore, when yellow fever has prevailed for a longer or shorter period in a locality, all the people capable of having the disease contract it and become immune. There being no more material for the disease to feed on, it dies out and disappears. If, however, a constant stream of foreigners is poured into this locality, they keep up the disease, and yellow fever will continue as long as the supply of non-immunes continues.

I would state, then, that for the most favorable development of yellow fever three things are essential: (1) a hot climate all the year around; (2) an abundant supply of fresh water stored near human habitations, and (3) a steady influx of foreigners who have not had the disease.

Let us take a few localities in which yellow fever has prevailed as illustrative of this view. Philadelphia has suffered many times, and severely, from yellow fever. At the period at which that city suffered from this disease only two of the elements favorable to its spread were present, namely, a large number of non-immune, and an abundant supply of well- and rain-water. Philadelphia is north of the natural habitat of the stegomyia mosquito, and it is found there only when introduced during the warm summer weather by shipping from the South. The cold winters destroy all yellow fever mosquitoes that survive the summer. The change from sailing to steam vessels has greatly decreased the number of times that stegomyia are introduced every summer into Philadelphia, and the introduction of a piped water supply has decreased their ability to find breeding-places when introduced. Philadelphia, therefore, has not suffered from yellow fever for fifty years, and probably would not again, even if we did not know that the mosquito transmitted the disease.

New Orleans is more favorably situated for yellow fever. It has two of the essentials for the *maximum* development—a steady influx of non-immune foreigners and an abundant supply of rain water stored close to human habitations. But the element of climate is against yellow fever becoming endemic. While New Orleans is within the stegomyia belt, the winters are sufficiently cold to destroy most of these mosquitoes, and for this reason yellow fever has never become endemic there for any number of years.

In Havana, Cuba, we have all three of the elements favorable for yellow fever. It has a climate sufficiently warm for the stegomyia mosquito to breed all the year around. While the winters are cool, the temperature is never low enough to frost, and, though the breeding of the yellow fever mosquito greatly decreases during January, February and March, in favorable localities they develop freely during these months. Rain water stored in and about the houses in barrels and cisterns was universal, and there was a large influx of Spanish immigrants and other foreigners. Consequently Havana was one of the principal centers of yellow fever. From 1760 to 1901 there was probably not a month in which yellow fever did not occur.

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* Address delivered at Jefferson Medical College, June 7, 1909.

In Panama the three essential elements for the development of yellow fever exist in the highest degree of perfection. The climate is warm all the year around. There is no difference in thermometric conditions between summer and winter. Wells and cisterns were generally depended on for the water supply, but the principal dependence was in rain water stored in barrels and cisterns. As the dry season lasts four months, and scarcely any rain falls during this time, rain water had to be stored in large quantities. For four hundred years the supply of non-immunes has been constant. This, I think, is the reason that Panama has acquired its preeminent reputation as an unhealthful locality. Many other localities in tropical America are just as favorably situated as is the Isthmus of Panama in respect to the first two elements (temperature and water supply) for the development of yellow fever, but no other locality approaches it in the third element. For four hundred years there has never been any interruption to the steady stream of foreigners who have crossed the Isthmus. These were food for yellow fever, and kept the disease alive in Panama. From our knowledge of yellow fever, and what we have seen in Panama, I believe that yellow fever has always existed there from the first Spanish settlement. Years can be found when no yellow fever was reported, but whenever a new garrison arrived, or a considerable number of non-immunes came, enough people died of the disease to attract attention, and yellow fever was reported. For the first three hundred years of the occupation of the Isthmus the principal travel consisted of the officials and employés (military and religious) of the great Spanish vice-royalty on the west coast of South America. Many of these died in Panama, and, as now and then an official of high rank would die, Panama obtained an exceedingly bad reputation all over the Spanish world.

About 1849, and for many years after, the rush of gold seekers to California took place. These suffered severely, and still further added to the unfortunate reputation of the Isthmus among English-speaking nations.

From 1850 to 1855 the Panama Railroad was under construction. The considerable force engaged in this work suffered so severely from the disease that work had to be stopped several times. By the authorities, the unfavorable health conditions were looked on as the principal obstacles to be overcome. From 1883 to 1889 the French had a large working force working on the canal. These also suffered very severely from disease, and this was considered one of the chief elements in their failure. The French experience on the Isthmus settled the reputation of Panama as to health conditions.

When the United States took possession in 1904 the Isthmus was generally looked on as probably the most unhealthy locality known. This was due, as I have pointed out, not so much to local conditions, as to the fact that no other tropical city has had for the same length of time such a steady supply of non-immunes. Many other tropical cities are just as well adapted to the development of yellow fever as is Panama, as far as the first and second conditions (temperature and water supply) are concerned, but none have had for anything like so long a time the third condition, namely, a steady inflow of foreigners.

There are no means of giving figures as to the death rates on the Isthmus. Until our arrival no general records were kept. We can obtain some basis for comparison by taking the records of the French Company. They had an excellent hospital, Ancon, where employés of contractors were treated at a charge of a dollar per day. But the contractor did not send many of his negro employés there. It was cheaper for him to discharge them. The hospital soon became infected with yellow fever, and non-immunes admitted generally contracted this disease. So the hospital was not very popular among the non-immunes. Many of the French employés when sick preferred to remain at their homes in Panama and Colon.

The records of Ancon Hospital were very accurately kept and are very good. During the nine years of the prosecution of the work under the French, 1,041 patients died of yellow fever in that hospital. As the Jamaica negro is not susceptible to yellow fever, the figures apply to whites alone, who are mostly Frenchmen. These are the figures for Ancon Hospital alone. They do not include those who died all along the line of the canal and in the cities of Panama and Colon. Probably at least as many died out of hospital as in it, and, while this is, of course, an estimate, I think it a very conservative one. This would give 2,082 deaths from yellow fever among the white French employés. The French averaged 1,606 white employés on their rolls. This means that the French lost five-fourths of their force in nine years or eleven-sixteenths in five years.

We have now been at work on the Isthmus five years. Our average white force has been 6,449. If we had lost at the same rate as I estimate the French did, we should already have buried 4,433 white men from yellow fever alone. We have an average of 4,852 Americans, including employés, their wives and children. At this rate we should by this time have lost from yellow fever 3,333 Americans.

Taking the stories of the survivors of families and small parties who came to the Isthmus during the French construction and also our general knowledge of yellow fever, I think the losses were larger than the above figures show. The family of one of the chief engineers consisted of five; four died of yellow fever. The family of the superintendent of the railroad consisted of five; three of these died of yellow fever. A party of seventeen engineers came on one steamer; sixteen of these died of yellow fever. Twenty-four sisters of charity came to Ancon Hospital at one time; twenty of these died of yellow fever. So from our knowledge of the conditions as they existed on the Isthmus and our general knowledge of yellow fever, I think it quite reasonable to say that one-third of the Frenchmen who came to the Isthmus during the French construction died of this disease.

Now let us see if we can estimate what this number was, taking our data from still another source. To keep an average of 4,852 Americans on the Isthmus connected with the work, we have had to bring to the Isthmus 24,260. It was estimated by the Department of Labor, Quarters and Subsistence, when that department was in existence, that the white gold roll is changed approximately about once a year. Estimating for the French in the same way, it would have been necessary to bring to the Isthmus in five years 8,330 Frenchmen, in order to keep their force up to 1,606. One-third of this number would give 2,770 as the deaths due to yellow fever. Applying this same ratio to the 24,260 Americans brought to the Isthmus in the past five years, we should have lost by this time 8,087 from this disease.

Now let us take the total force. The French average during their nine years was 10,121. They had in Ancon Hospital 5,651 deaths. The French were building the canal at Panama just as the subway in New York City was built, so far as police control is concerned. If a laborer got sick and went to his home and died, they had no means of finding out what became of him, any more than has the contractor on the subway in New York City. The man was simply dropped from the rolls. If he died in the hospital, he was recorded as a death, but not otherwise. The whole French canal was under construction by contract, and a contractor was charged a dollar per day for each patient he kept in hospital. The general opinion is that a very small proportion of the sick laborers were sent in. My experience with contractors teaches me that very few patients would come to the hospital if the contractor were charged a dollar a day for their care. The British minister at Panama tells me that he thinks that it would be a large estimate to say that one-fourth of the laborers who died, died in hospital. The present minister was there all during the construction days, and came in contact a great deal with the Jamaica negroes, who are British subjects and make up the bulk of the laboring force under the French. After giving the matter careful consideration, I think it fair to say that two men died out of hospital for every one who died in hospital. Estimating on this basis, and knowing that 5.651 died in hospital, we would have the total loss of 16,593. That is, the loss was eight-fifths of the average force.

The average American force for the past five years has been 26.532. Eight-fifths of this would be 42.449, which would be the number of deaths for nine years. For five years this would give us 23,580. I, therefore, make this claim for the sanitary work done on the Isthmus, that had not this work been done, we would have had the same losses as occurred under the French régimé.

At the end of the fifth year of work, this loss from yellow fever alone would have been, according to the French hospital figures, 3,463 Americans; according to my estimate, 8,087. The actual loss has been NINETEEN. At the end of five years from all causes and in the whole force, this loss would, according to my estimate, have been 23.850. Our actual loss has been 3,317.

The Card Index for Health of School Children.—The School Hygiene Association in France is making a valiant effort to have a system of card records adopted for each child. The card is to record the findings at each of the periodical visits of the medical school inspector, the physician merely noting that this or that organ or system of organs is defective, the weight or growth below standard, etc. The medical inspector does not state the nature or cause of the functional or organic disturbances he detects but merely notifies the parents that the child requires medical attention along certain lines, and that their family physician will diagnose the trouble and institute treatment. The card is the property of the scholar and is delivered to him as he leaves school, but is kept by the medical inspector in the meanwhile.

Original Articles

THE TREATMENT OF INFANTILE DIARRHEAS DUE TO INTESTINAL FERMENTATION WITH LACTIC ACID BACILLI*

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Modern classifications of the diarrheal diseases of infancy reject the term "summer diarrhea" as having no scientific foundation, since investigation has shown that the diarrheas occurring in the summer months present no etiologic, anatomic or clinical peculiarities distinguishing them from those occurring at other times of year. The only foundation for this term is the great frequency of these diseases during the hot months, the explanation of this frequency being the effect of hot weather both in lowering the infantile digestive powers and in increasing the opportunities for the contamination of food supplies. The term "summer diarrhea" is used here, therefore, only as a convenient name under which to group diarrheal diseases on which a series of investigations were made during the hot months.

The classification of the diarrheal diseases has been much discussed without final or definite agreement as to either its basis or its terminology. I believe that an etiologic basis is the only one in line with the most recent scientific advance. Under such a classification the diarrheal diseases fall naturally into four divisions, having as their fundamental etiologic factors: first, nervous influences; second, indigestion; third, bacterial fermentation, and, fourth, bacterial infection, respectively. The details of this classification have been sufficiently described elsewhere.

THE RÔLE OF BACTERIA

Some distinguished pediatrists have been unwilling to accept the distinction found in the last two divisions of this classification, contending that bacteria form but one etiologic factor, and that all diarrheal diseases caused by the action of bacteria should be designated as infectious. Nevertheless, into such a classification a certain amount of confusion in terminology at once enters, such terms as dysentery, ileocolitis, infectious diarrhea, fermental diarrhea, acute gastrointestinal intoxication, all referring to diarrheal diseases caused by bacteria, yet presenting various differences in their etiology, anatomic and clinical descriptions. The distinction between the conditions caused by true bacterial infection with parasites, which live in and on the tissues of the body, and those caused by bacterial fermentation with saprophytes, which live in and on the intestinal contents, I believe to be essential. Such a fundamental distinction removes much of the confusion. Under it the term infectious diarrhea may be selected to include all cases in which there is true infection with parasites, while the term fermental diarrhea, or acute intestinal indigestion of the fermentation type, may be selected to include all cases in which the fundamental etiologic factor is saprophytic fermentation. The term ileocolitis, like the term inflammation, is used, no longer as the name of a disease, but as a term describing the anatomic lesions found in a great variety of diseases, such as tuberculosis, typhoid and infectious diarrhea. The term dysentery may be used to describe any case of infectious diarrhea in which the *Bacillus dysenteriæ* is proved to be the infecting agent. The term acute gastrointestinal intoxication is a synonym for the fermental diarrhea. It has usually been employed to describe those cases in which symptoms from the absorption of toxins are particularly prominent.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

This distinction between parasitic and saprophytic action of bacteria has the further advantage of being in line with modern effort in specific therapy. It is the infectious parasites which give rise to the formation in the body of specific immune bodies, and which, therefore, are to be combated by means of serotherapy and vaccine therapy, in which such great progress has recently been made. The saprophytes must be combated by other methods, and to present the results of the systematic investigation of one of these other methods is the purpose of the present paper. This method necessitates the recognition of the etiologic distinction suggested, and suggests the possibility, under proper fundamental etiologic distinctions, of in time arriving at the elaboration of a specific form of treatment for each of the various forms of diarrheal disease.

THE ANTAGONISMS OF BACTERIA

This method depends on the principle of the antagonism existing between various varieties of bacteria, as developed by Metchnikoff and his followers. It has been early shown that in many instances one variety of bacteria possesses the power of inhibiting the development of another, and recent literature is filled with experimental work placing the proof of this principle beyond question. It has been chiefly applied to combating fermentation in the intestine, and has been successfully applied in a great variety of diseases, particularly in chronic disturbances and in certain chronic joint conditions supposedly caused by the absorption of the toxic products of intestinal fermentation.

THE RESEARCHES OF TISSIER

My own investigations on the application of this principle to the diarrheal diseases of infancy were suggested by the work of Tissier at the Pasteur Institute in Paris.

The subject was approached by Tissier from the point of view of the organisms causing fermentation in the intestinal contents. While he does not draw a distinction between parasites in the tissues and saprophytes in the food residue, he makes no mention of organisms found in the tissues, of tissue changes, or of agglutinin formation in the blood, but does refer constantly to the chemical results of the fermentation of the intestinal contents. Moreover, the clinical type of case described by him is exactly that described in a recent classification adopted by the pediatric department of Harvard University as intestinal indigestion with fermentation, or fermental diarrhea.

Tissier made careful studies of the intestinal flora in health and in this disease, establishing characteristic bacterial pictures for each, and identifying the various micro-organisms. He finds that in health the *Bacillus bifidus* is the predominating organism of the dejecta in overwhelming predominance. In disease a bacterial transformation occurs, the *Bacillus bifidus* disappears and a number of abnormal forms appear. Tissier identified these organisms and studied them in detail, particularly their fermenting action on food elements and products. Among them he found only one variety which was pathogenic toward animals, and which attacked proteid substances and their derivatives. In doing this it forms a toxin, which has some necrotic power on the tissues. This organism is the *Bacillus perfringens*, a large rod with square ends, staining by Gram's method. In early stages it has a spore at one end; later no spores are seen. It is anaerobic, ferments sugar, and has the special peculiarity of causing solution of meat or white of egg in sealed tubes.

Tissier believes this organism to be the cause of the class of cases which we know as fermental diarrhea. The products of the fermentation caused by other organisms he regards as having a possible contributive action through irritation of the mucosa. As predisposing causes he believes that lack of digestive power and unsuitable chemical composition of the food play the chief rôles. The predominance of this disease in artificially fed infants may be attributed to the excess of proteid in cow's milk, causing more unutilized proteid to pass into the intestine. He further noted that in recovery a very rapid change occurred in the bacterial content of the discharges. The abnormal forms disappear, and the *Bacillus bifidus* reappears, at first in its bifurcated form, and quickly resumes its place as [illegible] micro-organism. He found that in [illegible] a sufficiency of carbohydrate the *Bacillus bifidus* inhibits the growth of the *Bacillus perfringens*, but that in media without carbohydrates *B. perfringens* overcomes the *B. bifidus*.

Tissier concludes that the indications for treatment are to remove the fermenting intestinal contents by purgation and to cause a reappearance of the normal intestinal flora. The latter object can be furthered by diminishing the proteid and increasing the carbohydrate in the food, and can be more specifically attained by introducing into the intestine an organism tending to inhibit the growth of abnormal forms and to overcome them and cause their disappearance. In searching for a suitable organism for this latter purpose, he found that the *Bacillus bifidus* and the lactic acid bacillus both stop the development of *B. perfringens*, and he selected the latter, as it is more easily cultivated and handled than the former, which is anaerobic. He used this organism to effect a transformation of the intestinal flora.

In cases of fermental diarrhea, Tissier gave his patients pure cultures of the lactic acid bacillus, and under this treatment he noted a rapid transformation of the stools, subsidence of the symptoms and gain in weight.

This method of treatment struck me as being in the line of advance, as it is a specific treatment directed toward specific etiology, and based on scientific research. We are apt too long to neglect to apply in practice the knowledge given us from time to time by those engaged in scientific research. We had for a long time been accustomed to combating fermentation by purgatives, starvation, lavage of the colon, and regulation of the feeding. Intestinal antiseptics have not proved of value. Yet, although the fact that the growth of one organism inhibits that of another had long been known, it had not been applied in practice in cases of intestinal fermentation. It had never occurred to us to try to stop intestinal fermentation by introducing an inhibiting organism into the intestine—a procedure of very obvious possible value. This method of treatment as evolved by Tissier step by step to its logical conclusion proved very fascinating, and I determined to test it in practice.

Whether or not all Tissier's conclusions are justified does not affect the main issue. These processes may or may not be caused by the *Bacillus perfringens* or by other organisms. We do believe them to be caused by bacterial fermentation, and we are justified in introducing into the intestine any harmless organism that affords a hope of inhibiting the abnormal processes. The lactic acid bacillus is harmless. Tissier has shown that it inhibits the *Bacillus perfringens* in the test tube, and gives evidence that it effects a transformation of the flora in the intestine. Bienstock has shown that it prevents the putrefying action of the *Bacillus putrificus*. Therefore, it at least held forth a prospect of good results.

PRELIMINARY INVESTIGATION

I began my work on this subject in the autumn of 1905, confining my researches at this time to the bacterial examination of the dejecta in various types of diarrhea. This work was neither thorough nor complete, but the results, so far as they went, agreed with those published by Tissier.

In the beginning of the summer of 1906, I commenced a systematic investigation of the clinical results of this method of treatment in infantile diarrheal disease. This investigation I have continued ever since, whenever opportunity afforded, and am still engaged on it. My summer service in the out-patient department of the Infants' Hospital afforded a large material for this work, and I had the further advantage of Dr. Rotch's permission to carry on the work during his autumn service in the wards of the same hospital.

It occurred to me that buttermilk was made with lactic acid bacilli, and that an unpasteurized buttermilk should contain large numbers of this organism. Buttermilk had been widely advocated and employed in infant feeding, but, so far as I know, never on account of its bacterial content. It had been employed for chemical reasons, because its chemical composition was believed to be adapted to certain abnormalities of digestion and metabolism. In Europe it is invariably cooked before being given to infants, and in this country, so far as I know, had always been carefully sterilized or pasteurized. Consequently, none of the literature on buttermilk is of value as bearing on the question of the action of lactic acid bacilli in fermental diarrhea. Wurtz recommends it in cases of proteid and fat intolerance; von Rommel believes its acidity to be the active principle of its favorable action; Decherf believes it to be of wide value in gastroenteritis and rachitis, and prepares it by boiling with cane sugar. And there are many other recent articles on the great value of buttermilk as an infant food, usually in cases of chronic indigestion or atrophy. Other observers have not obtained such favorable results. It had been given a thorough trial, in a pasteurized form, in Boston, without notable favorable results. I believe that its favorable action is dependent on the proteid or fat intolerance so commonly observed, and have never seen a patient who did well on pasteurized buttermilk who did not also do well on proper milk modification.

I selected buttermilk as a convenient vehicle for giving lactic acid bacilli, in the first place, because it seemed to me that in that way, by combining medicine and food, I could introduce larger numbers of the organism than if I used small doses of bouillon cultures in addition to the food. In the second place, I wished to use a constant food in all my cases, and selected buttermilk as being a digestible food, not liable to produce accidental upsets from proteid or fat intolerance.

At this time I did not know, what later investigations have suggested as very probable, that the results depend on the particular strain of lactic acid bacillus employed. It was, therefore, more or less a matter of chance that an effective strain of the lactic acid bacillus was hit on in my preliminary work.

The buttermilk selected was first pasteurized to kill all other organisms, then inoculated with a pure culture of lactic acid bacilli, and ripened until the development of the organism had brought about the proper acidity and precipitation of the casein. The particular strain of lactic acid bacilli employed was isolated by Mr. S. C. Keith, bacteriologist with H. P. Hood & Sons, who selected it on account of the delicate aroma it produces.

I was unable to carry on proper bacteriologic investigations of the stools, confining myself to the study of the clinical results.

The results of the preliminary trial of this method of treatment were exceedingly striking. The unpasteurized buttermilk was first tried in 35 selected cases. Of these, there was evidence of a favorable result, as shown by a change in the character of the dejecta and by gain in weight, in 23. In 3 cases there was immediate cessation of diarrhea and favorable change in the character of the dejecta, without gain in weight. In 9 cases the lactic acid bacilli produced no effect.

CLINICAL PICTURE OF FERMENTAL DIARRHEA

Before describing the details of these results, it is perhaps necessary to describe the clinical picture presented in these cases in which the bacterial fermentation of saprophytes in the intestine is the principal etiologic factor. These cases are characterized by diarrhea, usually of sudden onset. The movements are loose, often very watery, are usually, but not always, green in color, have a foul or sour odor, and at times are frothy. Curds and mucus may or may not be present in addition. Blood is absent, and mucus is not extensive, except in cases of long standing. Very characteristic is the absence of persistent fever. The temperature may be high in the first twenty-four or forty-eight hours, but usually quickly falls after the diarrhea becomes thoroughly established; in very severe cases, or in long-standing cases, it is frequently subnormal. Vomiting is present in the majority of cases, and is often obstinate and severe. Colic may be present, but abdominal tenderness is almost invariably absent. There is rapid loss of weight. In severe, or long-standing cases, and in babies who have had repeated attacks, there is frequently an extreme degree of atrophy and inanition. In the severe cases are seen various toxic nervous manifestations, ranging all the way from slight apathy to convulsions and collapse.

In the majority of the cases the buttermilk was begun only after all ordinary and routine measures had failed. The work from the first was made as far as possible experimental. In the treatment of this disease there are always a certain number of cases which prove refractory, and which resist the employment of all the resources at our disposal. I endeavored, so far as possible, to select such cases for experiment with living lactic acid bacilli.

The routine employed in cases of fermental diarrhea was the following: The child was first given castor oil or calomel to empty the bowel, and nothing but boiled water was given for a period of twenty-four hours. Only barley water was given for a second twenty-four hours, and then feeding with a weak milk modification, usually fat 2, sugar 5, proteids 0.25, was begun. If there were no return of symptoms, the strength of the milk was gradually increased, beginning with an increase in the percentage of whey proteid only, such as fat 2, sugar 5, whey proteid 0.90, caseinogen 0.25. Later the other elements were increased until a satisfactory gain in weight was maintained. If, however, the resumption of milk feeding was followed by a return of the symptoms, and further loss of weight, the same process was repeated, milk being this time withheld longer, at least seventy-two hours. Bismuth and irrigation of the colon were also tried, and milk feeding was finally resumed in the form of whey, to be gradually strengthened. If after this treatment the symptoms did not improve after a reasonable time, the strength of the milk was increased, as I have found that by so doing a certain number of cases will gain weight in spite of the persistence of the symptoms of fermentation. If this failed, the case came into the category of obstinate and resistant cases, and was usually treated by alternating in turn the percentages of the various elements, by cereal diluents, by peptonizing, or by resorting to a wet-nurse. It was such resistant cases which were selected for the experiment with living lactic acid bacilli. The immediate improvement, alteration in movements, and gain in weight seen in so large a number of such cases were consequently all the more striking.

The number of cases in this preliminary investigation, made so far as possible under conditions designed to be experimental, was thirty-five.

Not all of the 35 cases were of the fermental type; 5 cases were diagnosed as of the irritative type of acute intestinal indigestion, and were selected for trial merely for experimental purposes. None of these 5 showed improvement. Two of the cases in the series were of the infectious type, probably of dysenteric origin, characterized by persistent fever and bloody mucous stools. In both of them, also, the unpasteurized buttermilk failed to bring about any notable change.

Thus only 2 of the cases of total failure were frankly of the fermental type of disease, the type described by Tissier. Consequently, if the fermental cases alone be considered, the figures are as follows: Treatment successful, 23 cases; partly successful, 3 cases; failed, 2 cases. In the 23 successful cases, the use of the living lactic acid bacilli was followed, not only by cessation of diarrhea and the signs of fermentation in the dejecta, but by rapid gain in weight. In the 3 partly successful cases, the signs of intestinal fermentation rapidly disappeared, but there was no notable gain in weight while the patients continued under observation.

PROOF OF SPECIFIC ACTION

In order to be able to justify the conclusion that these favorable results were due to the action of the living lactic acid bacilli, it was necessary to obtain evidence that they were not due to the chemical qualities of the buttermilk as a food. Such evidence is particularly necessary in view of the many reports of the favorable action of buttermilk referred to above. To investigate this, in fourteen resistant cases of the fermental type, the buttermilk was first given in a pasteurized form, and after a sufficient trial had demonstrated a failure to cause improvement the pasteurization was simply omitted, no other change being made. In every one of the cases the omission of the pasteurization was followed by immediate improvement. When it is remembered that these were all cases in which, under routine treatment, the babies had failed to show improvement, and that they had also failed to show improvement when fed on pasteurized buttermilk, I think I am safe in concluding, in so far as conclusions may be drawn from mere clinical experience, that the favorable change was not due to the chemical peculiarities of the food used, but was due to the only new element added to the treatment, which was the introduction of large numbers of living lactic acid bacilli into the intestine through the omission of the pasteurization.

FINAL STATISTICS

So favorable were the results of the treatment that I determined no longer to confine its use to resistant cases, but to use it as a regular weapon in the treatment of diarrheal disease. I have used it in several hundred cases. Many of the babies were out-patients, and did not return to the hospital often enough to permit the completion of the records. I was able, however, to collect fairly complete records of 120 cases. In all of these cases the treatment was with some milk preparation ripened with lactic acid bacilli, without subsequent pasteurization. Not all the babies were treated with unpasteurized buttermilk, in which the fat is removed by churning after the ripening; but many were treated with various formulas of modified milk similarly ripened. The statistics of these cases are as follows: Treatment successful, 78 cases; partly successful, 12 cases; failed, 30 cases.

Not all of the one hundred and twenty cases were of the fermental type. Twelve cases were diagnosed as of the irritative type of disease, and these cases were selected for trial only because they proved resistant to the routine treatment, or because the condition of the child was so serious as to warrant trying whatever held out any promise of doing good. As the two types run into one another, the element of fermentation often being found in cases of the irritative type, I hoped that, in view of the remarkable results which I was obtaining in the frankly fermental cases, I might be able to do good in these resistant irritative forms. This hope was disappointed. Every one of the twelve cases of the irritative type in which the buttermilk was used is numbered among the failures. This result was all the more significant in contrast with the similarly resistant fermental cases, and is evidence in favor of the specificity of this method of treatment.

Eight of the cases in the series were of the infectious type, but were selected because there were evidences of fermentation in the intestinal contents, in addition to infection of the tissues. In 4 of these cases, the patients had failed to gain after the acute stage of the disease had subsided, but later the use of the living lactic acid bacilli was immediately followed by Tissier's so-called "transformation of the stools" and by gain in weight. In the other 4 infectious cases, no good result followed the use of the treatment.

Taking the frankly fermental cases, the figures are as follows: Treatment successful, 74 cases; partly successful, 12 cases; failed, 14 cases.

CLINICAL EFFECTS OF THE TREATMENT

The principal result of this treatment, when successful, is the bringing about of what Tissier calls a "transformation of the stools." The character of the dejecta changes, frequently in the most remarkable way, from loose, foul and green, to formed, pale yellow, with a sour odor. The typical lactic acid stool is of rather firm consistency, is light yellow, or white and putty-like, and has a rather agreeable sour odor. With the cessation of the diarrhea, the toxic symptoms disappear, vomiting ceases, and the child becomes happy and comfortable. At times the sour milk is vomited at first, but this rarely lasts more than one or two days. In the most successful cases, gain in weight is rapid.

OCCASIONAL UNSUITABILITY OF RIPENED MILK AS FOOD

Not by any means in all of the successful cases were the babies able to gain weight on the ripened milk alone. In about 50 per cent. of the successful cases the children gained, for a time at least, while taking this food only. There were cases in which the use of the unpasteurized buttermilk was followed by immediate improvement in the symptoms and discharges, but in which a gain in weight did not follow. When, however, the buttermilk feeding was supplemented by alternate feedings of modified milk, steady gain in weight began at once. These cases suggested that, although the lactic acid bacilli had stopped the fermentation, the buttermilk was not adapted to the caloric needs of the child. When the buttermilk was supplemented with food of higher caloric value, the child gained weight. The lactic acid bacilli having prepared the way by causing a cessation of fermentation, the patient was able to thrive on a formula which in the first place it could not digest. In similar cases, the buttermilk was only continued until the alteration in the movements had occurred, and then the child was put back on the same food on which it had done badly before the use of the buttermilk. In such cases, after the buttermilk had been used, the patient gained weight. Thus the ripened milk was used only as a medicine against the fermentation, to be omitted when it had accomplished its work. In some cases in which unpasteurized buttermilk was used, in which there was no gain in weight, the food appeared, not so much of deficient caloric value, but rather as an irritant, causing gastric or intestinal indigestion. In these cases, it was similarly used merely as a temporary weapon against the saprophytic fermentation.

USE OF BOUILLON CULTURES

In four cases of this type, in which ripened milk could not be digested, the method of giving pure bouillon cultures of lactic acid bacilli was employed, as originally advocated by Tissier. In all four of these cases there was the characteristic change in the *dejecta*, but in only one of them was there subsequent gain in weight. I think this method of treatment is to be recommended in those cases in which ripened milk causes serious symptoms of indigestion.

RIPENING OF MODIFIED MILK MIXTURES

The fact that buttermilk as a food is not always adapted to the digestive and caloric needs of individual infants suggested the possibility of another method of employing living lactic acid bacilli in the treatment of this class of cases. A certain amount of fat in the food may be necessary for a particular infant, on account of the high caloric value of this food element, and the existence of this fermental diarrhea does not imply the existence of fat intolerance. On the other hand, the high proteid content of buttermilk may cause indigestion in babies of special susceptibility to proteid. If it is possible to grow lactic acid bacilli in buttermilk, it is also possible to grow them in other percentage modifications. We can thus combine the two indications for treatment by giving the food suited to the digestive and nutritive requirements of the infant and by stopping fermentation; and can also combine the resource of living lactic acid bacilli with the wide range of resources afforded by percentage feeding, by ordering the various mixtures which we believe adapted to the need of individual cases to be ripened with lactic acid bacilli.

With this end in view, I arranged with the Walker-Gordon Laboratory that on order they would inoculate and ripen any percentage formula with lactic acid bacilli. Under this arrangement the physician only has to select the formula which he believes to be most favorable for the individual case and write a prescription to the laboratory, as, for example: fat 2, sugar 5, whey proteid 0.90; caseinogen 0.25, lime water 5, ripened with lactic acid bacilli.

This experiment has by no means proved to be a complete success. It soon appeared that the various modified milk formulas, when thus ripened, were not well digested. The fat in such formulas, after ripening, tended to separate out and float on the top of the bottle in the form of liquid butter. This is not a suitable food for these babies. In view of this, I soon found that I was obliged to confine my work to formulas containing no fat. Fat-free milk ripened with lactic acid bacilli was the food employed in the majority of the later cases in the series. When made from whole milk and undiluted, this food amounts to about the same thing as buttermilk, the difference being that in buttermilk the fat is removed by churning after the milk is ripened, and in the fat-free milk the fat is removed by centrifugalization before ripening. It is possible to vary the percentages of proteid and the milk sugar, and in this way the resources of percentage feeding may be in part employed in cases which present peculiarities of digestive power and requirements. Many patients, however, take the ripened fat-free milk undiluted without indigestion. In those cases in which this food is insufficient in caloric value, it may be alternated with a modified milk formula in which there is fat, or it may be used temporarily as a medicine only.

Later work conducted by Mr. Howe, of the Walker-Gordon Laboratory, has shown that if the milk is properly ripened, formulas may be used which contain fat as high as 1 per cent. without the fat separating out. I have as yet had no clinical experience in the use of such formulas.

VARIATIONS IN THE EFFECTS OF DIFFERENT STRAINS OF LACTIC ACID BACILLI

Metchnikoff and other foreign investigators have pointed out that the lactic acid bacillus as a species is subdivided into many different strains which are not all of equal value in combating fermentation and putrefaction. I have been able in part to confirm this observation as applied to intestinal fermentation in infants. I have found that strains of lactic acid bacillus isolated from other sources did not appear always to give such good results as the strain of which I originally hit on by chance. My figures are too few to afford absolute proof of this fact, but I think it very probable that in the use of living lactic acid bacilli to combat fermentaton it is necessary to select a strain of good or proved value. I think that some of the failures which have been reported from this method of treatment may possibly be due to the fact that different strains have been employed. For instance, I have found during the last summer that Hood's buttermilk, when given unpasteurized, did not produce such good results as it had in previous summers, nor did it in general give such good results as the ripened fat-free milk prepared at the Walker-Gordon Laboratory from the original strain. I do not know whether the strain of the lactic acid bacilli now employed in Hood's Laboratory is the same as that employed in previous years, but I do know that there have been changes in their laboratory, and that Mr. Keith is no longer their bacteriologist. Recently we have received in Boston from Bulgaria Metchnikoff's own strain of the lactic acid bacilli, which has proved of value in combating fermentation. During the coming summer there will be a sort of contest between the home product and the importation from Bulgaria to determine which is the more effective.

THE USE OF THE LACTIC ACID BACILLUS IN PRACTICE

In practice, when it is desired to employ this treatment of living lactic acid bacilli, the physician may use buttermilk from some dairy, giving it unpasteurized, or he may prepare his own ripened milk with a culture of the lactic acid bacillus obtained from the nearest dairy. The objection to obtaining the bacillus in this way is that it is a matter of chance whether or not an efficient strain of the organism is hit on. It is possible that the buttermilk, or culture, so obtained, may be of the highest efficiency, and, on the other hand, it is possible that it may have but little power against saprophytic fermentation. It is better to obtain a culture of proved value for use in those places where laboratory feeding is available; the culture may be kept in the milk laboratory, and the ripened milk may be ordered from there. When laboratory feeding is not available, or is not desired, the physician may prepare his own ripened milk in the following manner: He should first send for a bouillon culture of an efficient strain of the organism. Such strains may now be had certainly at the Walker-Gordon Laboratory in Boston, and possibly at other places. The cream is removed as far as possible from the milk, and then the skimmed milk is inoculated with the lactic acid culture. The inoculated milk is then kept in a warm place until enough acidity develops to sour the milk or to produce a very fine curd, when the milk is set aside and kept on ice for use. Some of this milk is set aside each day, to be used as a culture for inoculating the next day's supply, and in this way the strain of lactic acid bacillus may be perpetuated indefinitely, as it apparently has the property of killing out accidental contaminating organisms. The artificial tablets of the lactic acid bacillus, such as the lactone tablets and similar products, make excellent buttermilk for mere feeding purposes, but are not advisable when the purpose is to give as many as possible of the living bacilli.

INDICATIONS FOR AND LIMITATIONS OF THE USE OF LIVING LACTIC ACID BACILLI

The results of my investigation on the action of living lactic acid bacilli have led me to conclude that it is of great value in the class of infantile diarrheas designated as fermental. The numerous variations in the series show that it is not absolutely a specific treatment. It is possible that these failures may be attributed to the fact that the particular strain of lactic acid bacillus used is not effective against the particular strain of fermenting organisms concerned. It is probable that there are also many other elements tending toward failure of which we know nothing. I believe, however, that this treatment is an extremely valuable resource, and one which is applicable to a very difficult class of cases. I believe that it should be tried in every case of infantile diarrhea characterized by saphrophytic fermentation, and in every case of chronic intestinal indigestion and atrophy in which the movements are characterized by evidences of fermentation. I believe a ripened milk containing living bacilli to be the best food with which to begin feeding in cases of fermental diarrhea after the initial period of starvation.

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ABSTRACT OF DISCUSSION

Dr. J. P. Crozer Griffith, Philadelphia: I have no doubt that Dr. Dunn has employed the best milk in his preparation, but in country districts, where it is not possible to obtain the cleanliness desired, would he feel justified in trusting that the growth of lactic acid bacteria would do away with the necessity of pasteurizing? I am a great believer in the use of buttermilk, but I have always heated it after it has been made. What, too, in the ordinary nomenclature, would Dr. Dunn call this lactic acid germ? There are many different germs, various in name, which are capable of producing lactic acid.

Dr. Elias H. Bartley, Brooklyn: There are about twenty-five or more different kinds of lactic-acid-producing bacilli. What particular one does Dr. Dunn consider the best? I have had failures and I can readily understand from the statements made that some lactic-acid bacilli are satisfactory and that others are absolutely worthless. For the treatment of this fermentative diarrhea we must have a suitable strain. This being the case, it is important that we know what strain to select or where we can get it. I think Dr. Dunn was exceedingly fortunate, as he says, in happening to hit on a satisfactory strain in his experiments. That might happen to any one of us, but the accident is much more likely to be in the other direction of getting a wrong strain. It seems to me that the value of the paper lies in reducing what has been a haphazard practice to a scientific one. Has Dr. Dunn had any difficulty in getting children to take the ripened milk? I have had that difficulty in feeding children on buttermilk. Babies do not seem to like it and after a few days refuse to take it. Again, Dr. Dunn says that in some cases the children were not improved and in some cases they were even made worse. Could he determine beforehand which cases were suitable for this treatment and which were unsuitable?

Dr. Thomas Morgan Rotch, Boston: From time to time great advances are made in the milk laboratories in just such questions as this. One of the latest laboratory discoveries is how to make the curdled milk fine enough to go through the nipple, which is the most practical point. These are not infectious cases but are due to the action of the saprophytes. They are simply fermentative forms of diarrhea, but there is no true infection in the cases in which the lactic-acid bacillus is an important factor in their relief. Now as to the separation of the strain; two years ago in Stockholm, I met Professor McGee, the most prominent Scandinavian physician. They have made great advances there in the use of buttermilk and Dr. McGee said that they had the very best buttermilk in the world: but he had found that some years it would act satisfactorily and another summer it would not. Dr. McGee came over here to see what Dr. Dunn was doing and he has taken back with him some of this strain with which Dr. Dunn has been working. We do know that this strain which Dr. Dunn has differentiated is the most satisfactory obtainable. The fact that a physician does not have success with the treatment does not prove that the method is a failure because, in the first place, he must have the especial type of case to treat and then he must have the especial strain of bacillus for the treatment.

Dr. John Lovett Morse, Boston: I wish to call attention to a paper read before the American Pediatric Society in 1905 by Dr. H. T. Bowditch and myself, the title being "Certified Milk in Infant Feeding." In it, many of the points brought out to-day were covered. I am sorry to disagree with my colleagues. I have, however, treated the babies in the same hospital with the same buttermilk, with skim milk "ripened" with the same strain of the lactic-acid bacillus and with mixtures ripened with the same strain and have not obtained the same results as did Dr. Dunn. My experience is that the results from buttermilk and from milk mixtures "ripened" with the lactic-acid bacillus are no better than those obtained from other milk mixtures of the same chemical composition. The results are the same whether the buttermilk is pasteurized or not. In a certain number of cases, however, the results are striking. In these cases they are probably due to the change in the bacterial flora. If the lactic-acid bacilli have this favorable action in suitable cases, they should have just as unfavorable an action in unsuitable cases. At present I doubt if we are able clinically to determine in advance what children will be helped and what injured by this treatment. It seems to me, therefore, that until we have some method for the rapid bacteriologic examination of the stools we certainly can not use this method of treatment intelligently and perhaps not even safely.

Dr. Frank P. Gengenbach, Denver: I had the pleasure of spending nearly a year in Finkelstein and Heubner's clinics in Berlin, and they feel that the feeding of buttermilk derives its value from its chemical composition and the low fat percentage, and they also believe that the diarrhea is due simply to indigestion and not to the bacteria and that when you remedy the indigestion by a starvation process and then build up the nutrition you have met the indications. They have secured the same results by the use of pasteurized buttermilk that Dr. Dunn has obtained from the use of non-pasteurized buttermilk.

Dr. T. M. Rotch, Boston: There is no question but that after a baby has had an attack of this condition that we suppose is due to the saprophytes, the intestine becomes so vulnerable to irritation that other organisms will take hold very readily. After a child has been infected one can still go on with the lactic-acid bacillus and though one can not get at the organisms that have gotten into the tissues, at least it is better to continue the lactic acid, thus taking care of the saprophytes that are present in the intestinal tract and at the same time supporting the child thereby.

Dr. LeGrand Kerr, Brooklyn: What was the longest time that any particular infant was fed on these mixtures? Following the time that the child was fed on these mixtures was there any subsequent disturbance?

Dr. C. H. Dunn: I did not go into all the different statistics as to the names of the various strains of this bacillus. There is an immense number of strains. Each dairy has its own strain which it selects on account of the aroma it imparts to the butter. I tested the strains from a number of dairies until I got a strain that had the particular action desired. This strain has not yet been given a name. Another satisfactory strain is the Bulgarian. There are doubtless other good strains. In reply to Dr. Griffith, I would certainly not rely on the bacilli to counteract unclean milk. In every case milk is very carefully pasteurized to clear it of other organisms and it is then ripened. Two things are involved in the treatment of fermentative diarrhea, one being the removal of the fermentation and the other the feeding of the baby. In order to meet the last condition it is absolutely necessary to take into consideration the baby's peculiarities of digestive powers and requirements. These two things must go together to get success. I know that many physicians have believed that babies could be put on a fat-free food and kept on it indefinitely, but I have seen cases in which a baby with this form of diarrhea was kept on this food for one day and then was put back on its regular food and got along well. This is a suitable method of treatment in those cases showing symptoms of autointoxication when there are green stools, etc. Cases characterized only by undigested food in the stools are not suitable for this method. Only those babies having greenish, loose stools should be put on this treatment. The very title of Dr. Morse's paper, "Acidified Milk in Infant Feeding," shows that he does not quite grasp what I mean. The feeding in these cases must be distinguished from the specific treatment of the fermentation. When one speaks of buttermilk in infant feeding it is an entirely different matter. I am perfectly willing to grant the value of buttermilk feeding in cases of fat intolerance. In these cases pasteurized or non-pasteurized buttermilk has proved of great value, but this has nothing to do with the specific action of the lactic-acid bacillus. I believe you will find that giving a bouillon culture of a good strain in suitable cases will give as good results as buttermilk. It is not a question of buttermilk or fat-free milk, for that is a question of the digestive powers of the child. This is merely a question of fermentation. There is no question but that in those fourteen cases the moment the pasteurization was omitted, no other step being taken, the movements changed to normal, the patients began to gain in weight and all symptoms subsided. I do not see how there could be a greater proof that this favorable result was due to the action of the living lactic-acid bacillus. I am talking merely of acute toxic cases due to saprophytic action. I have had other patients who could be fed nothing but acidified milk, but those were not cases in which the action of the lactic-acid bacillus was required, and the good result was due to the need of an acidified diet.

ADENOID HYPERTROPHY DURING THE FIRST YEAR OF LIFE AND ITS TREATMENT *

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Although a great deal has been written concerning adenoids in children, so that competent practitioners readily diagnose them and have them removed, little attention has been paid to these growths in early infancy. In New York at least a very considerable proportion of infants have adenoids that require removal during the first year.

Adenoids, if they are to be removed at all, should be removed as soon as they produce symptoms, and especially during the first year of life, for it must be remembered that children with lymphatic hyperplasia have one of the indications of lymphatic constitution and may not be good subjects for anesthesia, while adenoids may be removed during the first year without anesthesia.

Attention should be directed to this abnormality of early infancy, as the persistence of this trouble interferes with the proper development of the child, by reflex action, by the irritation produced by its presence and by the obstruction it causes.

The postnasal pharynx at birth is a space only ¼ inch high by ⅓ inch wide so that a slight adenoid hypertrophy at this period will cause obstruction. By the end of the first year this space has increased to nearly double this size.

Adenoid hypertrophy often produces symptoms during the first days of life, that is, the mother states that the child has had snuffles from birth. Cases of this sort are sometimes diagnosticated as syphilis, but the other characteristics of syphilis at this period are lacking. A case of this sort in which the patient was receiving specific treatment came under my observation during the past winter. Becoming convinced that the symptoms were due to adenoid hypertrophy and not to specific disease, the specific treatment was discontinued and the child carefully watched for other symptoms, but nothing more developed that might be interpreted as an evidence of syphilis.

The snuffles are particularly evident when the child is nursing and may occur during sleep if the child's mouth is kept closed. If the mouth is kept open snoring replaces the snuffles.

Snuffles result from an adenoid which produces irritation, and if it becomes large enough to obstruct the postnasal pharynx we have the further symptom of mouth-breathing.

Mouth-breathing, like snuffles, may be due to other causes than adenoid hypertrophy, but most of the cases of nasal obstruction during the first year are due to adenoid hypertrophy.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

A third indication of this condition during the first year is the presence of recurrent colds. These colds have the character of a cold in the head, there being some nasal discharge and fever, and they are accompanied sometimes by a pharyngitis. These recurrent colds during the first year are usually caused by adenoid hypertrophy.

A most characteristic sign of this condition is the cough. This cough is usually of a persistent character, often without any indication in the pharynx or bronchi to account for it. In some cases it is paroxysmal and may simulate closely the paroxysms of whooping cough. A case occurred in my hospital work during the past winter. A baby of six months, weighing 10½ pounds, was presented by the house physician as affected with whooping cough. The child was very anemic and in a desperate condition, vomiting apparently practically all its nourishment and coughing continuously day and night. The removal of the adenoid in this case stopped immediately both the cough and the vomiting.

A fifth symptom of adenoids during the first year is otitis media, a complication which may produce dangerous results. One only or all of these symptoms may be present.

The determination of the presence of an adenoid in a very young infant is not as readily made on account of the very small space in the postnasal pharynx. In making this examination, as in all examinations of young children, rapid manipulation avoids resistance and disturbance.

In order to make an adenoid examination have the child held with its head against the left shoulder of the nurse, the right arm of the nurse holding the hands and her left hand holding the forehead. Then if the left thumb of the examiner is pressed against the right cheek of the child so as to bring the buccal mucous membrane between the gums, the ends of the fingers of the left hand grasping the right side of the lower jaw, a firm grip is obtained which makes it impossible for a child with teeth to bite the examiner. The right index-finger is used for passing through the mouth into the postnasal space, or, if this is too small to admit the index-finger, the little finger may be used. The rough surface of the adenoid is quickly detected by one accustomed to making this examination, which may often be completed so quickly that the child does not cry.

An acute adenoid enlargement due to a cold which was not preceded by adenoid symptoms may occasionally disappear on hygienic treatment without medicine or with the syrup of iodid of iron, with or without cod-liver oil. For a chronic enlargement, however, only one method of treatment is available, and that is the removal of the adenoid by operation.

This operation in infancy can be done quickly without an anesthetic and with very little shock to the child and no lasting fright.

For the purpose of operation an assistant is necessary to hold the child, while a nurse should be present to assist and to remain awake by the child for two nights to watch for hemorrhage.

The child should be wrapped tightly in a sheet which binds the arms to the sides and should be held upright by the assistant with the back of the head of the child against the assistant's left shoulder, one of his arms pressing against the arms of the child, the other hand pressing its forehead back against the shoulder.

A gag is first introduced which is held by the nurse, while the operator, holding down the tongue, passes a Gottstein curette to the posterior nares, bringing the blade of the instrument as far up and as far forward as possible, then first by a backward followed by a downward stroke the adenoid may be removed in one piece.

In case it is not entirely free, forceps must be used. In most cases one use of this instrument is sufficient. The child's head is then thrown forward over a basin and the hemorrhage, if profuse, is checked by the application of cold to the face, cold water, ice-water, or ice. When the hemorrhage has ceased the child is put back in the previous position, the tongue depressed, the throat examined for particles that may have been incompletely severed and the finger introduced into the postnasal pharynx to be sure that the adenoid is completely removed.

The child is then put to bed without a pillow, lying on the side with the face forward, and the nurse is supplied with a spray containing 1 to 5000 adrenalin, to be used in case of hemorrhage, in which case the child should be placed with face upward and the adrenalin sprayed through the nose.

The shock of this operation is so slight that on a number of occasions the child has been asleep, having taken its bottle as usual, before the operator left the house.

Frequently it is desirable to operate when the child is still having some fever, this being often due to a cold to which the adenoid hypertrophy is contributing. I believe that a temperature of 100 to 101 may not be a contraindication of operation, as frequently such a temperature drops to normal after the operation and does not rise again.

In some cases, owing to the desire of the parents, an anesthetic must be given. It is well in such cases to mention the possibility of a lymphatic constitution and the danger of anesthesia in that case. If an anesthetic is used it should be nitrous oxid, and only sufficient should be used to produce primary anesthesia.

As to the results of this operation, a slight increase in the snuffles may be present for a few days; rarely is there any fever or evidence of pain, while the improvement in the symptoms and in the development of the child is always most satisfactory.

In conclusion, adenoid hypertrophy which causes persistent symptoms should be operated on as early as the fourth or fifth month of life; the operation should be done rapidly and without an anesthetic.

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ABSTRACT OF DISCUSSION

Dr. George L. Richards, Fall River, Mass.: I have been considerably interested in this work, especially in children under 1 year of age, in whom there is difficulty in breathing at night. These children are nose breathers during the day but not at night, and in these cases the question of operating for adenoids comes up. Dr. Morse has written much on this subject and as a result of his teachings many of us watch for this condition in children who are referred to us far more than we did. In these young children it is hard to get the finger into the nasopharynx without injury and examination with the mirror is out of the question. In such cases, if the child is held before a good light, the tongue depressed and the palate lifted up with a palate retractor, a very good view of the pharynx can be obtained. The question of anesthesia or *non-anesthesia is more or less a question of the desire of the* parents. Very little anesthesia is required, but as a rule I find that the parents prefer even that little. The Gottstein curette is a good instrument, but it has one disadvantage, namely, the possibility of cutting too deep. The Shütz adenotome, and the new one devised by Dr. LaForce, of Iowa, give good results.

With either of these instruments the entire adenoid can be removed with one stroke of the blade and practically as painlessly as the ordinary examination. A small adenoid curette devised by Vogel is then used in each fossa of Rosenmüller to be sure that no adenoid is left in this situation. The one essential thing in the young child, on account of the danger of getting an infection of the Eustachian tube, is to do the operation in a good light and see the field of operation; not merely to operate by the sense of touch.

Dr. Henry L. Coit, Newark: I have generally expressed myself as opposed to operation on adenoids in children under 1 year, but Dr. Freeman's plan is reasonable and convincing. My chief objections to the operation are the danger to small infants of anesthetics, and the fact that they do not well bear the loss of blood. I would be sorry to see this matter turned over to the throat and nose men if they go after these little children as they do after some others who do not have adenoids. I recall one case of a child of 14 months who had a continuous temperature, and the physician made a diagnosis of tuberculosis due to hypertrophy in the nasopharynx. An operation was done and they did not get anything. I was called, and after disproving tuberculosis, found that the child had never been weaned and was taking nothing but milk with still 7 per cent. sugar. There were malodorous stools, and besides this the child had indulgent parents and grandparents. I felt sure that faulty feeding was the cause of its malnutrition and fever. It was not a difficult feeding case, but a case of easy feeding with difficult parents and grandparents. A trained nurse was ordered for the purpose of hypnotizing the parents and weaning the baby and there was no further trouble.

Dr. John Lovett Morse, Boston: The members of the section probably remember that I read a paper on this subject two years ago. I want to exphasize again the fact that the symptomatology of adenoids in infancy is not that of adenoids in childhood. The symptoms in infancy are snuffles, repeated "colds," irritating cough at night, difficulty in nursing and otitis media. I believe that adenoids should be removed whenever they cause symptoms, no matter how young the baby is. I have seen them cause symptoms in babies only a few weeks old. I do not operate myself, because I believe that the operation demands the skill of a specialist. I disagree entirely with Dr. Coit and think that the operation should be performed by a man who is in the habit of doing these operations. I do not find that the specialists are unduly anxious to operate; in fact, my difficulty in Boston is to find men who are willing to operate on these babies for me. They object to operating on young patients and it is very difficult to make them appreciate how much harm adenoids may do in infancy. It is not recognized how frequently otitis media in babies is due to adenoids. A baby may have repeated attacks although the adenoids are very small. In fact, it is possible to overlook them in these cases unless a very careful examination is made.

Dr. Frank S. Churchill, Chicago: I do not think there is any danger of the throat and nose men operating too often. My experience also has been that they are afraid to operate on these babies. I have had difficulty in getting them to operate even when it is clearly shown that there are marked symptoms of adenoids. Unless there is something very urgent about adenoids or hypertrophied tonsils, I always like to have them operated on during the late spring or early summer, when the children will have time to recuperate before the winter. My experience has been that when operated on late in the fall the children are apt to have as many colds during the ensuing winter, or even more of them, than before the operation was done. It is hard to convince the nose and throat men of the fact because they do not see the children afterward. We do. That is a point on which I think the nose and throat men need education. As to a temperature of 100 of 101 F. being an indication for the removal of adenoids, I would want to be very sure as to what that temperature is due before having an operation done. I should want to watch the baby carefully for several days and make many cultures before subjecting it to an operation.

Dr. D. J. M. Miller, Atlantic City: I think that much of the odium that has fallen on this operation has been due to the fact that these patients have been so often subjected to an operation by some one not skilled in the work. I am much opposed to the general practitioner performing such an operation. When these symptoms occur in very young babies, it seems to me that the milder cases can be cured without operative interference by the continued use of a weak solution of iodin in glycerin, and by the use of antiseptic sprays. I have seen babies recover entirely under this treatment.

Dr. S. W. Kelley, Cleveland: As has been said, whatever the physician may wish, the question of anesthesia is often decided by the parents. If it is left to me I do not use an anesthetic when operating on infants. For this I have sometimes been criticized as cruel. In other cases the parents positively will not allow the use of an anesthetic. In operating without anesthesia a sitting posture is to be preferred. As to the manner of holding the patient, instead of having a sheet wrapped tightly about the chest and the nurse holding the patient over the arms with one hand and with the other hand holding the head of the patient, I prefer to have the nurse seated, reaching around from behind, hold the patient by the wrists, one in each hand, the patient's arms being crossed in front; and have an assistant, standing behind, hold the child's head between his hands, at the same time retaining the gag in place, unless a Whitehead gag is used. I object to scraping and crushing instruments, and prefer a sharp curette or one of the forms of guillotine.

Dr. W. D. Ludlum, Brooklyn: One point barely referred to is the question of recurrence. In my judgment these babies operated on very early, even when the operation is thoroughly done, sometimes have recurrences, and that I think is the reason of the indisposition on the part of specialists to operate even up to 2 years of age.

Dr. S. M. Hamill, Philadelphia: I am not ordinarily ultraconservative, and in a general sense I agree with what Dr. Freeman has said. If I understood him correctly, he does not operate in every case of adenoids, but only in those cases in which there is some evidence of obstruction or some definite interference with health. Of course, when there is some indication, I approve of the operation, but the idea of operating in every case of adenoid swelling, which may be but temporary, or on every child with otitis media merely because one thinks there may be some slight enlargement of the pharyngeal tonsil, as has been advocated, I believe to be wrong. I agree that the symptomatology of adenoids in early life differs from that in older children, but these symptoms are frequently only temporary and will disappear without operation, and unless the indications are very definite, I do not approve of operation during the first year. I believe also that, aside from the child, we have no right to subject the parents to the shock of any operation on an infant, which may be of questionable value.

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A third indication of this condition during the first year is the presence of recurrent colds. These colds have the character of a cold in the head, there being some nasal discharge and fever, and they are accompanied sometimes by a pharyngitis. These recurrent colds during the first year are usually caused by adenoid hypertrophy.

A most characteristic sign of this condition is the cough. This cough is usually of a persistent character, often without any indication in the pharynx or bronchi to account for it. In some cases it is paroxysmal and may simulate closely the paroxysms of whooping cough. A case occurred in my hospital work during the past winter. A baby of six months, weighing 10½ pounds, was presented by the house physician as affected with whooping cough. The child was very anemic and in a desperate condition, vomiting apparently practically all its nourishment and coughing continuously day and night. The removal of the adenoid in this case stopped immediately both the cough and the vomiting.

A fifth symptom of adenoids during the first year is otitis media, a complication which may produce dangerous results. One only or all of these symptoms may be present.

The determination of the presence of an adenoid in a very young infant is not as readily made on account of the very small space in the postnasal pharynx. In making this examination, as in all examinations of young children, rapid manipulation avoids resistance and disturbance.

In order to make an adenoid examination have the child held with its head against the left shoulder of the nurse, the right arm of the nurse holding the hands and her left hand holding the forehead. Then if the left thumb of the examiner is pressed against the right cheek of the child so as to bring the buccal mucous membrane between the gums, the ends of the fingers of the left hand grasping the right side of the lower jaw, a firm grip is obtained which makes it impossible for a child with teeth to bite the examiner. The right index-finger is used for passing through the mouth into the postnasal space, or, if this is too small to admit the index-finger, the little finger may be used. The rough surface of the adenoid is quickly detected by one accustomed to making this examination, which may often be completed so quickly that the child does not cry.

An acute adenoid enlargement due to a cold which was not preceded by adenoid symptoms may occasionally disappear on hygienic treatment without medicine or with the syrup of iodid of iron, with or without cod-liver oil. For a chronic enlargement, however, only one method of treatment is available, and that is the removal of the adenoid by operation.

This operation in infancy can be done quickly without an anesthetic and with very little shock to the child and no lasting fright.

For the purpose of operation an assistant is necessary to hold the child, while a nurse should be present to assist and to remain awake by the child for two nights to watch for hemorrhage.

The child should be wrapped tightly in a sheet which binds the arms to the sides and should be held upright by the assistant with the back of the head of the child against the assistant's left shoulder, one of his arms pressing against the arms of the child, the other hand pressing its forehead back against the shoulder.

A gag is first introduced which is held by the nurse, while the operator, holding down the tongue, passes a Gottstein curette to the posterior nares, bringing the blade of the instrument as far up and as far forward as possible, then first by a backward followed by a downward stroke the adenoid may be removed in one piece.

In case it is not entirely free, forceps must be used. In most cases one use of this instrument is sufficient. The child's head is then thrown forward over a basin and the hemorrhage, if profuse, is checked by the application of cold to the face, cold water, ice-water, or ice. When the hemorrhage has ceased the child is put back in the previous position, the tongue depressed, the throat examined for particles that may have been incompletely severed and the finger introduced into the postnasal pharynx to be sure that the adenoid is completely removed.

The child is then put to bed without a pillow, lying on the side with the face forward, and the nurse is supplied with a spray containing 1 to 5000 adrenalin, to be used in case of hemorrhage, in which case the child should be placed with face upward and the adrenalin sprayed through the nose.

The shock of this operation is so slight that on a number of occasions the child has been asleep, having taken its bottle as usual, before the operator left the house.

Frequently it is desirable to operate when the child is still having some fever, this being often due to a cold to which the adenoid hypertrophy is contributing. I believe that a temperature of 100 to 101 may not be a contraindication of operation, as frequently such a temperature drops to normal after the operation and does not rise again.

In some cases, owing to the desire of the parents, an anesthetic must be given. It is well in such cases to mention the possibility of a lymphatic constitution and the danger of anesthesia in that case. If an anesthetic is used it should be nitrous oxid, and only sufficient should be used to produce primary anesthesia.

As to the results of this operation, a slight increase in the snuffles may be present for a few days; rarely is there any fever or evidence of pain, while the improvement in the symptoms and in the development of the child is always most satisfactory.

In conclusion, adenoid hypertrophy which causes persistent symptoms should be operated on as early as the fourth or fifth month of life; the operation should be done rapidly and without an anesthetic.

211 West Fifty-seventh Street.

ABSTRACT OF DISCUSSION

Dr. George L. Richards, Fall River, Mass.: I have been considerably interested in this work, especially in children under 1 year of age, in whom there is difficulty in breathing at night. These children are nose breathers during the day but not at night, and in these cases the question of operating for adenoids comes up. Dr. Morse has written much on this subject and as a result of his teachings many of us watch for this condition in children who are referred to us far more than we did. In these young children it is hard to get the finger into the nasopharynx without injury and examination with the mirror is out of the question. In such cases, if the child is held before a good light, the tongue depressed and the palate lifted up with a palate retractor, a very good view of the pharynx can be obtained. The question of anesthesia or non-anesthesia is more or less a question of the desire of the parents. Very little anesthesia is required, but as a rule I find that the parents prefer even that little. The Gottstein curette is a good instrument, but it has one disadvantage, namely, the possibility of cutting too deep. The Shütz adenotome, and the new one devised by Dr. LaForce, of Iowa, give good results.

With either of these instruments the entire adenoid can be removed with one stroke of the blade and practically as painlessly as the ordinary examination. A small adenoid curette devised by Vogel is then used in each fossa of Rosenmüller to be sure that no adenoid is left in this situation. The one essential thing in the young child, on account of the danger of getting an infection of the Eustachian tube, is to do the operation in a good light and see the field of operation; not merely to operate by the sense of touch.

Dr. Henry L. Coit, Newark: I have generally expressed myself as opposed to operation on adenoids in children under 1 year, but Dr. Freeman's plan is reasonable and convincing. My chief objections to the operation are the danger to small infants of anesthetics, and the fact that they do not well bear the loss of blood. I would be sorry to see this matter turned over to the throat and nose men if they go after these little children as they do after some others who do not have adenoids. I recall one case of a child of 14 months who had a continuous temperature, and the physician made a diagnosis of tuberculosis due to hypertrophy in the nasopharynx. An operation was done and they did not get anything. I was called, and after disproving tuberculosis, found that the child had never been weaned and was taking nothing but milk with still 7 per cent. sugar. There were malodorous stools, and besides this the child had indulgent parents and grandparents. I felt sure that faulty feeding was the cause of its malnutrition and fever. It was not a difficult feeding case, but a case of easy feeding with difficult parents and grandparents. A trained nurse was ordered for the purpose of hypnotizing the parents and weaning the baby and there was no further trouble.

Dr. John Lovett Morse, Boston: The members of the section probably remember that I read a paper on this subject two years ago. I want to exphasize again the fact that the symptomatology of adenoids in infancy is not that of adenoids in childhood. The symptoms in infancy are snuffles, repeated "colds," irritating cough at night, difficulty in nursing and otitis media. I believe that adenoids should be removed whenever they cause symptoms, no matter how young the baby is. I have seen them cause symptoms in babies only a few weeks old. I do not operate myself, because I believe that the operation demands the skill of a specialist. I disagree entirely with Dr. Coit and think that the operation should be performed by a man who is in the habit of doing these operations. I do not find that the specialists are unduly anxious to operate; in fact, my difficulty in Boston is to find men who are willing to operate on these babies for me. They object to operating on young patients and it is very difficult to make them appreciate how much harm adenoids may do in infancy. It is not recognized how frequently otitis media in babies is due to adenoids. A baby may have repeated attacks although the adenoids are very small. In fact, it is possible to overlook them in these cases unless a very careful examination is made.

Dr. Frank S. Churchill, Chicago: I do not think there is any danger of the throat and nose men operating too often. My experience also has been that they are afraid to operate on these babies. I have had difficulty in getting them to operate even when it is clearly shown that there are marked symptoms of adenoids. Unless there is something very urgent about adenoids or hypertrophied tonsils, I always like to have them operated on during the late spring or early summer, when the children will have time to recuperate before the winter. My experience has been that when operated on late in the fall the children are apt to have as many colds during the ensuing winter, or even more of them, than before the operation was done. It is hard to convince the nose and throat men of the fact because they do not see the children afterward. We do. That is a point on which I think the nose and throat men need education. As to a temperature of 100 of 101 F. being an indication for the removal of adenoids, I would want to be very sure as to what that temperature is due before having an operation done. I should want to watch the baby carefully for several days and make many cultures before subjecting it to an operation.

Dr. D. J. M. Miller, Atlantic City: I think that much of the odium that has fallen on this operation has been due to the fact that these patients have been so often subjected to an operation by some one not skilled in the work. I am much opposed to the general practitioner performing such an operation. When these symptoms occur in very young babies, it seems to me that the milder cases can be cured without operative interference by the continued use of a weak solution of iodin in glycerin, and by the use of antiseptic sprays. I have seen babies recover entirely under this treatment.

Dr. S. W. Kelley, Cleveland: As has been said, whatever the physician may wish, the question of anesthesia is often decided by the parents. If it is left to me I do not use an anesthetic when operating on infants. For this I have sometimes been criticized as cruel. In other cases the parents positively will not allow the use of an anesthetic. In operating without anesthesia a sitting posture is to be preferred. As to the manner of holding the patient, instead of having a sheet wrapped tightly about the chest and the nurse holding the patient over the arms with one hand and with the other hand holding the head of the patient, I prefer to have the nurse seated, reaching around from behind, hold the patient by the wrists, one in each hand, the patient's arms being crossed in front; and have an assistant, standing behind, hold the child's head between his hands, at the same time retaining the gag in place, unless a Whitehead gag is used. I object to scraping and crushing instruments, and prefer a sharp curette or one of the forms of guillotine.

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SUPPURATIVE CONDITIONS IN THE JOINT REGIONS IN INFANTS AND YOUNG CHILDREN *

L. E. LA FÉTRA, M.D.
Associate in Diseases of Children, Columbia University; Assistant Attending Physician to the Babies Hospital
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Inflammations in and about the joints in children are interesting for several reasons. The anatomic diagnosis is very often puzzling. The point of invasion of the infecting germ is frequently impossible to discover; and, finally, the results of early treatment are surprisingly satisfactory, except in cases of general sepsis. In looking over the records of a large number of cases of inflammations in the region of the joints in patients under five years old, it is found that the cases fall naturally into certain groups to which it may be profitable to call attention. My topic does not include tuberculous arthritis, but it is important to keep in mind all the while the picture of tuberculous joint disease in order to mark the contrast to the conditions that will be mentioned. This is all the more necessary because the great body of physicians are prone to consider joint disease either as tuberculous, if chronic, or as rheumatic, if acute.

Rheumatism is so rare under two years that this diagnosis should be made in a young child only by exclusion of all other possible conditions. True, rheumatism does occur, both multiple and monarticular. When monarticular, and especially if involving the knee or hip, it makes one very anxious lest the condition be tuberculous. In fact, it is frequently mistaken for tuberculous joint disease. Inasmuch as rheumatism is so rarely a suppurative disease, I shall omit it from my discussion.

As those who see the conditions in their early stages, the members of this Section can do a great service in calling attention to other forms of joint involvement besides tuberculosis and rheumatism. With the acute suppurative conditions delay in treatment or treatment by fixation and rest, with or without traction, is apt to result disastrously.

SUSCEPTIBILITY TO JOINT INFECTIONS

The joints in infants and young children are very susceptible to all sorts of infections. The younger the child the more apt it is to have joint infection, and, moreover, the number of joints apt to be involved seems to be greater the younger the child. This susceptibility is undoubtedly due to the rapid growth taking place at the joint ends of the bones.

Any large joint may be involved but there is a proneness for the additional infection of the small joints of the wrist, hand and foot and sternoclavicular articulation.

Shortly after birth the infections most frequently met are those due to sepsis, and somewhat later, though still during the first few months, those due to the gonococcus. Both these infections are apt to be multiple. Between the first and fifth year the child may suffer from various types of infection of several or single joints. The infective agent may be the streptococcus, the staphylococcus, the pneumococcus, the typhoid bacillus, the influenza bacillus, and occasionally (with the hip joint) the colon bacillus. Children over five years old are much less apt to have suppurative conditions in the regions of the joints, and when they do occur the point of invasion can usually be determined. Joint disease in children over five is usually either tuberculous or rheumatic.

TYPES OF INFECTION

The groups of cases which it seems important to emphasize are the following:

I. Arthritis due to the streptococcus, or to the staphylococcus or to mixed infection by these germs.

II. Arthritis due to the gonococcus.

III. Arthritis due to the pneumococcus.

IV. Arthritis due to the bacillus of influenza.

V. Cases of osteomyelitis, including periostitis and epiphysitis.

VI. Cases of deep cellulitis.

VII. Cases of perinephritic abscess, psoas abscess and ischiorectal abscess.

I shall relate very briefly a few typical cases of some of the groups.

GROUP I.—ARTHRITIS DUE TO STREPTOCOCCUS OR STAPHYLOCOCCUS OR BOTH

Case 1.—*Purulent Arthritis of Shoulder Due to Streptococcus.*—T. R., 1½ years old, in Babies' Hospital from May 1 to May 20, 1903, had been a healthy baby; was nursed three days, then fed on condensed milk, rice water and soup; had chickenpox at 1 year. He had never walked; had no digestive disturbance; had purulent conjunctivitis at 9 months, lasting five weeks. He entered hospital with history of having had for three weeks a "sore shoulder." It was slightly swollen at first, growing steadily worse. The child was feverish at times. Physical examination showed the fontanel 1 inch in diameter and depressed. The child looked stupid. Heart and lungs were normal; abdomen flaccid; liver and spleen not enlarged; all superficial lymph nodes enlarged. The right shoulder joint was swollen and fluctuating but not red, though somewhat warm. Temperature was from 102 to 103. Aspiration drew thick, yellow pus, containing the streptococcus. Operation was done on May 4 under chloroform, incision being made into the joint. On the next day temperature was 102 F. at noon and the child was very restless. Being exposed to diphtheria he was given 500 units of antitoxin. On May 6 the temperature was under 100 and the wound was looking well. The child's weight on admission was 16 pounds, and on May 11, eight days later, was 17 pounds 4 ounces. On May 20 the weight was 17 pounds 8 ounces and the wound had entirely healed, joint motion being good.

Case 2.—*Multiple Septic Arthritis Due to Streptococcus, Bronchopneumonia, Acute Pleurisy.*—A. S., 20 months old, was in Babies' Hospital from Oct. 25 to Oct. 29, 1904. The baby was taken acutely ill with fever, but without vomiting or diarrhea, three days before admission to the hospital. She became very fretful, crying out when touched; had also slight cough. Examination showed numerous dry friction rubs but no change in the breathing sounds. Behind were heard fine crackling râles. There was some dulness on right base. Respirations were 80 to the minute. The spleen was two fingers' breadth below, liver one finger's breadth below ribs. There were some enlargements of the joints of both extremities. The left wrist was swollen and hot, the left ankle and foot also. There was a fluctuating swelling, painful, hot and discolored on the inner side of the right arm at about its middle. The temperature was 103 to 105.8 F.; pulse, 160; respirations, 60 to 80; leucocytes, 9,000. The swelling of the left wrist and the left dorsum of the foot persisted and the right shoulder also became red and swollen. On October 28 the leucocytes were only 7,000. On October 29 the temperature was lower and the baby died at 10 p. m. Examination for gonococci was negative. Aspiration of shoulder joint showed streptococcus pus. Autopsy showed the lesions mentioned above and also an acute nephritis.

Case 3.—*Mixed Staphylococcus and Streptococcus Arthritis of Knee.*—J. H., male, aged 20 months, was in the Babies' Hospital from Jan. 14 to Feb. 28, 1907. Four days previous to admission the child stopped walking and cried with pain in the feet. There was high fever and swelling in both legs below the knee. For two days the swelling was mostly in the left leg around the knee; great pain on motion. On admission the whole region of the left knee was red and swollen. Ice bags were applied. Temperature was 104. At operation on February 2 the knee joint was incised and 4 ounces of pus obtained. It showed staphylococci and streptococci. By February 28 the wounds were nearly well and motion of joint was good.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

CASE 4.—*Streptococcus Arthritis of Shoulder and Hip.*—J. S., male, 7 months old, was admitted to the Babies' Hospital Nov. 27, 1908. Three weeks before admission the child had abscess on the right side of the neck. There was some general rigidity after that time and six days before admission the child was said to have had a convulsion. At this time it was noticed that the left thigh was larger than the right and there was some pain on motion. On admission the left shoulder joint was found to be swollen and tender and the shoulder was not moved. The left hip was likewise larger than the right and the thigh held flexed by spasm. No definite point of fluctuation was made out. The following day Dr. Hartley aspirated the left hip joint, obtaining turbid yellow fluid which showed staphylococci and later streptococci. Three days later a retropharyngeal abscess containing streptococci was opened. One week after admission 37,500,000 dead streptococci were given by hypodermic injection. The temperature ranged from 99 to 102 and the joints remained swollen. Two weeks later thin pus was drawn from the left gluteal region and showed streptococci. The following day an incision was made into the left gluteal region and a small quantity of light yellow fluid obtained. The joint was not incised. No operative treatment was attempted for the shoulder, but both joints healed completely.

GROUP II.—GONOCOCCUS ARTHRITIS

During the past five years I have seen two cases of gonococcus arthritis at the Vanderbilt Clinic, both being monarticular, and there have been nine cases at the Babies' Hospital, most of which I have seen. Seven of these Babies' Hospital cases occurred in the gonococcus epidemic at the hospital in 1903 and 1904, and were reported in detail by Dr. Kimball. The remaining two cases occurred in 1907, and there was not a single case in the intervening years.

A peculiar feature of these cases is that they occur almost exclusively in male infants without any urethritis or other discoverable entrance port. One of my cases at the Vanderbilt Clinic followed gonococcus ophthalmia. The baby was three weeks old and had had ophthalmia from birth. The right knee became swollen and tender on the tenth day. By the use of alcohol dressing the inflammation was allayed and the synovitis subsided.

Another feature is that there are usually several joints involved and that the tissues around the joint as well as the joint itself are implicated. Often the para-articular swelling is the greater and on cutting through these tissues there is a large amount of serum and pus obtained, while there may be little obtained from the joints. There is fever for two or three days before the joint swelling appears, ranging from 101 to 103.

A final characteristic is that the inflammation, even though purulent, yields readily to treatment; usually to such simple measures as 60 per cent. alcohol compresses or aluminum acetate and alcohol, equal parts. If these measures are not successful, simple incision into the joint is all that is needed. The joints heal quickly with no impairment of the function.

Of course, some of the cases prove fatal.

The histories of two cases will be given briefly:

CASE 5.—*Multiple Gonococcus Arthritis.*—C. J., male, aged 2½ months, was in the Babies' Hospital from Jan. 25, 1907, to Feb. 18, 1907; died of bronchopneumonia. He was brought to the hospital on account of vomiting and cough. Twelve days after admission, i. e., on February 8, had temperature for two days up to 101 to 102.6. Then there appeared on the dorsum of the left foot above first metatarsophalangeal joint a tense swelling, with shiny skin. On the third day the temperature was 102 to 102.4, and the abscess was opened, ½ ounce of pus being evacuated from the joint. The next day temperature was 101 to 102.6 and the right ankle was swollen and tender but not fluctuating; the swelling seemed rather diffuse. By noon the second joint of the left forefinger was swollen and tense. Ice poultices were used. White blood cells were 13,100; temperature, 99 to 103.2. On the fifth day the metatarsal joint had closed. There was no fluctuating in the other three joints. The next day the ankle joint was much improved. On the eighth day the toe joint was again swollen and fluctuating so it was opened again, a small amount of thick yellow pus being obtained. This pus showed typical Gram-negative intracellular diplococci. Culture showed the same organisms. On the eleventh day the right sternoclavicular joint was swollen and the temperature went up to 104.8. The next day the baby developed a strip of bronchopneumonia and had a temperature up to 105, dying the following day.

CASE 6.—*Multiple Gonococcus Arthritis.*—E. v. E., 3 months old, male, was in Babies' Hospital from January 24 to March 16, 1907; admitted to hospital because he did not gain in weight and was vomiting. On February 11, just sixteen days after admission and two days after the case just mentioned developed, there appeared diffuse non-fluctuating swellings at the left ankle and at last joint of the right middle finger. The temperature had been elevated for two days from 100 to 103. White blood cells were 13,100. For the next four days no new joints were involved, but the temperature ranged between 99.8 and 102.6. On the fifth day the left elbow and wrist were swollen—a diffuse swelling seeming like a cellulitis or para-articular inflammation. On the seventh day aspiration but no pus. By the sixteenth day the temperature was about normal, and the joints remained swollen and tender. Sixty per cent. alcohol dressings were applied. On the twenty-fourth day diplococci were demonstrated in the thick green pus obtained from elbow and ankle; they were proved to be gonococci both by microscope and by culture. The patient was discharged with the joints still somewhat swollen, but not very tender.

GROUP III.—ARTHRITIS DUE TO PNEUMOCOCCUS

CASE 7.—*Arthritis of Shoulder (Probably Pneumococcus).*—H. F., male, 9 months old, was in the Babies' Hospital from March 14 to April 4, 1905; discharged cured. He had pneumonia in both lungs when 6 weeks old; was very sick for twelve days. For three months there was swelling of the shoulder joint. Just as the child was recovering from pneumonia the mother noticed that the shoulder was swollen, hot and red; it had been so ever since. There was irregular fever. The left shoulder joint was found to be swollen. The child did not move the arm, and, moreover, it could not be moved freely. There was slight fluctuation. The temperature ranged from 99 to 102.2. Aspiration of joint was made on March 21 and pus obtained, and the next day an incision was made into the joint and a large amount of pus was evacuated, most of which seemed to come from around the joint. By March 25 the temperature was normal and the leucocytes were 12,000. On April 4 the shoulder was healed.

CASE 8.—*Purulent Pneumococcus Arthritis of the Left Knee, Bronchopneumonia, Meningitis.*—A. McL., female, 8 months old, was in the Babies' Hospital from Nov. 21 to Dec. 10, 1903; discharged dead. The patient was apparently well until seven weeks before entering the hospital, when she had a typical bronchopneumonia on both sides. Recovery was satisfactory. A swelling of the left leg was present. When incised 2 ounces of pus which showed pneumococci was obtained. Following this there was considerable constipation. One week before entrance to the hospital there was vomiting of cerebral type. It was for meningeal symptoms that baby was admitted. The meningitis proved to be due to the pneumococcus as shown by examination of the cloudy fluid obtained by lumbar puncture. On admission the right knee was found enlarged and held flexed. The patella floated. Kernig's sign was absent on the right side; could not be tested for on the left because of rigidity of the knee. The symptoms while in hospital were those of acute meningitis.

GROUP IV.—ARTHRITIS DUE TO THE INFLUENZA BACILLUS

Case 9.—*Multiple Arthritis and Meningitis Due to Bacillus of Influenza.*—In the spring of 1907, in consultation with Dr. F. S. Fielder, I saw a 12-months old patient who had had cough, fever and prostration with comparatively high temperature and, in addition, swelling of the metacarpophalangeal joints of the right hand. Later the left wrist became swollen, and the right hip and one of the vertebral joints. The child was sick for twelve days and died with no definite symptoms of meningitis. We had agreed on the diagnosis of grip, but no lumbar puncture had been made and no withdrawal of joint fluid. But a very careful necropsy was made by Dr. Welch of the Cornell Laboratory, and from all these joints, five in number, was obtained a pure culture of the influenza bacillus, absolutely no other organism being present. At the necropsy examination of the brain was made, and from the sulci was obtained pus of similar character to that found in the joints. Moreover, the germs found by careful culture were also only those of influenza. This baby had had simply signs of great prostration; no signs of meningitis at all. It may be that the baby had meningitis from the beginning, but it was a most striking case of influenza bacillus septicemia with terminal meningitis.

GROUP V.—OSTEOMYELITIS, INCLUDING PERIOSTITIS AND EPIPHYSITIS

Case 10.—*Osteomyelitis of the Femur.*—M. A., 14 months old, was seen at Vanderbilt Clinic, Oct. 2, 1905; on October 2 was referred to Roosevelt Hospital. There was a history of some inflammation about the vulva six months previous, but there had been no vaginal discharge. For the previous week the left thigh had been swollen and recently had been increasing very rapidly in size. It was painful to the touch and was not used. There was no pain in the other leg nor in any other joints. The swelling of the left thigh was pear-shaped and involved the upper four-fifths. There was no fluctuation, but the thigh was very tender. There was general glandular enlargement. Temperature was 102.4. Operation evacuated pus which came from about the upper part of femur, not from joint.

Case 11.—*Probable Periostitis.*—B. B., aged 13 months, was in the Babies' Hospital from Nov. 18 to Dec. 18, 1907; had periostitis of the thigh following a perirectal and scrotal abscess. Three weeks before entrance the left thigh became swollen near hip joint; swelling increased toward the knee. There was marked pain on motion and child did not move the thigh. The swelling of the left thigh was very hard and not movable; seemed connected with the bone. The skin was tense but not red or shiny. Passive motion of the thigh at hip joint was possible. Temperature varied from 100.2 to 100.6. Ichthyol ointment was used on the thigh. After a few days temperature became normal and the swelling of the thigh subsided. When the child was discharged one month from the time of admission the thigh was much smaller and the baby's condition was greatly improved. In this case it is not positive that the inflammation was suppurative. It is probable that it was a periostitis.

Case 12.—*Probable Osteomyelitis of Epiphysis.*—J. F., male, aged 16 months, was in the Babies' Hospital from Aug. 13 to Aug. 20, 1906. Eight days after admission there was swelling on the lower part of the left leg. This swelling increased and prevented walking. Latterly there was redness and heat. The swelling was found to be over the lower end of the left fibula, most marked about the malleolus; but the redness extended below the ankle and to the back of the leg. There was fluctuation. The child would not bear his weight on the foot but passive motion at the ankle was possible. Two days after admission 1½ ounces of pus were evacuated through an incision made at the lower part of swelling. The connection with the bone was not made out. The child was discharged with the wound almost healed.

Case 13.—*Osteomyelitis of Epiphysis.*—E. W., male, 17 months old, was in the Babies' Hospital from March 23 to April 4, 1907. At noon on the day preceding admission the child seemed feverish, complained of pain in the right leg and refused to walk. The right knee was swollen on the morning of admission and the child kept the knee flexible. On examination the right knee and the tissues below it were found much swollen, measuring nearly two inches more than the opposite leg. The skin was shiny and there was some redness. Temperature was 103.4. Next day white blood cells were found to be 28,400, and of these 80 per cent. were polynuclear. Notwithstanding ice poultices and hot poultices, the swelling increased and became more tense. Two days later thick, green pus was evacuated through incision on right knee. The pus did not come from the joint but from below the joint. At the time it was not made out whether the bone was affected, but four days later denuded bone could be felt deep in the wound, showing that the point of infection had been the shaft of the tibia.

GROUP VI.—CELLULITIS

Case 14.—*Pneumococcus Abscess in Region of Knee.*—J. L., male, 7 months old, was admitted to the Babies' Hospital March 29, 1909. When 6 months old he began to have swelling about the right hip gradually extending toward the knee. He had always been well up to that time. About March 1 he was vaccinated and after that there was fever and the thigh became worse. Seven days before admission to the hospital the family physician aspirated fluid and then operated on the right thigh above the knee. On admission the patella was apparently floating, the knee swollen and held flexed. Pus was discharging from old wound above the knee. On the following day two openings were made into the abscess, one above and one below and to the inner side of the patella. The bone was not involved and the abscess seemed entirely superficial. Smear and blood from the wound showed pneumococci. Seven days after the first operation by Dr. Alfred S. Taylor the wound was reopened and an incision made into the external surface of the joint. A week later it was thought necessary to open the joint again, but an incision above the joint on the anterior aspect of the thigh obtained a large amount of pus. Culture from this showed pure staphylococci and no opening was found into the joint. The temperature after the operation ranged from 98 to 104, and so 50,000,000 dead streptococci were injected into the left arm on April 1. This was repeated on April 6, and on April 10 10 c.c. of Hiss's leucocyte extract was injected. On May 3 the left thigh was badly swollen and about 4 ounces of thick yellow pus were aspirated; 20 c.c. of normal horse serum were injected into the cavity. The culture from this pus showed short streptococci. From the time of the last operation the child improved very satisfactorily.

Case 15.—*Stereptococcus Abscess Around Left Hip Secondary to Infected Nevus on Face.*—E. H., female, 4 months old. When 3½ months old a small vein at the back of a nevus on the right cheek burst and there was a slight bloody discharge. After three days there were some small vesicles in this area which later discharged some pus. Next, the lymph nodes under the right jaw became swollen. The swelling was quite diffuse but subsided after a few days. At the same time it was noticed that the left leg was not moved but was kept flexed at the knee and the hip. The temperature ranged from 100.6 to 102 up to the day of my visit, when it ranged from 102 to 103.5. There was limitation of motion by muscular spasm and some enlargement of the left hip but no sure swelling of the joint. The baby was kept under observation, the thigh being immobilized in an aluminum acetate dressing. After two weeks the baby was operated on by Dr. William G. Erving of Washington, D. C. Aspiration of the abscess in the region of the left hip had shown a pure culture of streptococcus. The abscess when opened was found to be of considerable extent and had dissected out the trochanter and neck of the left femur, although the capsule of the joint seemed to be intact on exploration at that time. The abscess drained freely but did not heal until two months later. Meanwhile the baby's general condition gradually improved. The convalescence was uneventful save for suppuration of an infected lymph node below the right ear, which was the probable site of the original infection. One week after the healing of the wound in the thigh an *x*-ray examination showed apparent damage to the upper border of the acetabulum with slipping of the head upward out of the socket. Otherwise no bony damage was made out. From that time until the present, traction has been continued on the leg and passive movements are still carried on, so that while the capsule is still probably distended there is no measurable shortening. There is full rotation, full adduction, normal extension and 60 degrees of abduction; so that there is every reason to believe that the joint will be a good one. The baby's general condition is excellent. This report was received from Dr. Erving on May 29.

CASE 16.—*Deep Streptococcus Cellulitis Extending to the Bone.*—S. R., female, 14 months old, was in the Babies' Hospital January 15 to March 12, 1906; developed diphtheria and was discharged unimproved. She came into the hospital for pneumonia. Discharge from the nostrils showed influenza bacillus. Ten days after admission the patient developed swelling and redness of the right metatarsus. Temperature went up to 103 F. Three weeks after admission the patient developed swelling near the left knee joint, especially to the outer side of the patella. The patella did not float. Aspiration showed thick pus, pure streptococcus. On the following day this pus was evacuated by an incision to outer side of patella; the knee joint was not involved. Two weeks later there was swelling of the right shoulder in front, below and behind. Incision at angle of scapula evacuated several ounces of pus, which came not from shoulder joint but from around it. Cultures showed streptococci. At one place bare bone of the seventh rib could be felt. On account of the development of diphtheria the child was sent away; all the wounds were discharging; no joints involved.

CASE 17.—*Deep Cellulitis of Thigh Near Hip Joint.*—S. W., 5 weeks old, was in the Babies' Hospital from February 18 to March 14, 1906; discharged cured. The child had some gastro-intestinal disturbances from birth and stomatitis when ten days old. At 4 weeks a swelling was noticed in the left groin; this increased and became tender. It involved the inguinal glands and was at time of admission more marked on the outer side of the thigh. There was redness and fluctuation; the child did not move the leg; passive motion was painful. Temperature was 100.6. On the day after admission 4 ounces of thin pus were evacuated through an incision on the outer side of the thigh. There was pus in the tissues surrounding the bone but no communication with the joint. Cultures showed *Streptococcus b.eris.* The wound healed entirely in three weeks.

GROUP VII.—PERINEPHRITIC ABSCESS, ETC.

CASE 18.—*Perinephritic Abscess, Bronchopneumonia, Marasmus.*—H. D., 7 months old, was in the Babies' Hospital from Jan. 21 to Feb. 22, 1904. Death occurred from bronchopneumonia. The baby was brought to the hospital because it was wasting and crying all the time and had fever. On examination the abdomen was found enlarged, its superficial veins distended over the diaphragm. The liver was one inch below the ribs and the spleen just felt. Superficial lymph nodes were found slightly enlarged, particularly near the axillæ. The abdomen became more distended while in the hospital and began to point in back on the left side. Temperature ranged from 102 to 103.8. On January 30 the abscess was incised and about 1 ounce of pus removed. After the operation the temperature varied according to the freedom of the discharge. Finally the baby refused food and died in an attack of edema of the lungs.

DIAGNOSIS

In general the first point in diagnosis is to determine whether or not the inflammation involves the joint. This would rule out scurvy and syphilitic epiphysitis. It is difficult to say at the outset that the joint is not involved; even after operation the surgeon may at times be in doubt. Next the diagnosis should be made from tuberculosis and rheumatism. Deep cellulitis of the thigh, perinephritic abscess and ischiorectal abscess should be carefully distinguished from disease in the hip joint.

TREATMENT

It is remarkable that wet dressings of aluminum acetate or of 60 per cent. alcohol or of these lotions combined succeed in a surprising number of cases. If progress is not satisfactory, incision should be made at an early date. The operation need be simply an incision into the joint with evacuation and provision for thorough drainage. It is remarkable that such simple measures succeed so frequently not only in saving life, but in securing perfect functional results. Of course, when the bone is diseased, the infected focus should be thoroughly scraped out. Vaccine therapy, especially the use of streptococcus and staphylococcus vaccine, is often a very valuable aid.

CONCLUSIONS

1. Cases of arthritis and of what might be called "near-arthritis" are quite common in infants and young children.

2. In all cases a careful history of the infant from birth should be obtained. The inquiry should be directed particularly toward obtaining a history of umbilical infection, of early ophthalmia, of vaginitis, of pneumonia, typhoid and influenza.

3. The feeding history, especially the use of sterilized, carbohydrate, or proprietary foods, should be carefully scrutinized. An inspection of the gums may save an incision into the thigh. It goes without saying that the patient should be undressed entirely for examination. Men frequently fail in diagnosis, not because they do not know, but because they do not see the patient and do not make use of what they know.

4. The diagnosis of tuberculosis and rheumatism should be made by exclusion.

5. The earlier proper treatment is instituted the fewer the number of joints involved and the greater the chance of complete recovery of function.

110 East Sixty-second Street.

ABSTRACT OF DISCUSSION

DR. C. N. DOWD, New York: The symptoms of these joint infections and other infections in infants are often so similar that diagnosis is very difficult and the most skilful and astute practitioner may fall into the trap thus constructed. Two illustrative cases have recently come to my notice—in one a meta-pneumonic hip inflammation was believed to be due to intestinal disorder. The physician and the diet were changed and hard feeling was engendered which could not even be allayed after the hip abscess was opened and the baby had recovered. The second case presented a particularly unfortunate sequence of events. A child of 1½ years, previously well, awakened from his nap crying, and from that time was feverish and ill. The attending physician, unable to relieve him, called in a well-known pediatrist, who believed the trouble to be intestinal and advised accordingly. A little later another pediatrist was called and then an orthopedic surgeon and after a few more days a general surgeon. An *x*-ray picture was then taken, as the region of the right hip was evidently the place of maximum inflammation. This picture revealed no abnormality, but a large abscess was opened a few days later just above Poupart's ligament. Prompt healing followed and all seemed well for a time. A few months later, however, a limp was noticed and examination and another radiogram showed a really serious condition—an absence of the head and neck of the femur, which had been destroyed by the inflammation. This, of course, made a permanent and very disturbing deformity. These cases are cited to illustrate the difficulties of diagnosis and the possible seriousness of the disease and also to indicate our debt to Dr. La Fetra for calling our attention to so important a subject.

Value of Playgrounds.—The head of the schools of New York city says: "Public playgrounds have induced children to come to school whom we could not previously reach; they are a potent instrumentality for raising the health, mentality and morals of the community."—*Hygiene and Physical Education.*

PRIMARY HEMORRHAGIC GLAUCOMA, WITH PROBABLE SYMPATHETIC INFLAMMATION

A CLINICAL AND MICROSCOPIC STUDY OF A CASE *

MORTIMER FRANK, B.S., M.D.
CHICAGO

Pathologic investigations on hemorrhagic glaucoma have been reported in considerable number, but, owing to the peculiar combination of conditions, this case is of interest and we can, I think, make some useful deductions from it. It points out that a broad iridectomy freeing the filtration angle is not always a preventive of glaucoma, although iridectomy is the best method of treating acute glaucoma. It further indicates that diminished depth of the anterior chamber and narrowing or closure of the filtration angle are not absolutely essential for the production of glaucomatous symptoms, but that, perhaps, hypersecretion and changes in the character of the fluids of the eye impeding proper filtration are sometimes concerned in the onset of glaucoma.

History.—On the evening of Jan. 14, 1908, I was called to see M. R., a man aged 31, of Jewish extraction. The day before the patient went to Milwaukee on a business trip feeling as well as usual, never having had any severe illnesses or any previous eye trouble. Twenty-four hours prior to coming under observation he suffered with a sudden severe pain in the left eye and within two hours the globe was intensely injected and vision lowered so that he could barely make out his hand. After a long anxious night a well-known Milwaukee ophthalmologist was consulted in the morning, who told the patient to get back to Chicago as quickly as possible.

Examination.—The left eye presented all the cardinal symptoms of acute glaucoma. The globe was brick-red, the scleral vessels full and the cornea steamy with diminished sensibility. The anterior chamber was equal in depth to its fellow and contained about two minims of dark-colored blood. The pupil was fully dilated and immobile, with the characteristic glaucoma reflex. The tension was plus 3. An ophthalmoscopic examination was impossible, owing to the corneal haziness and cloudiness of the vitreous. The vision was reduced to counting fingers at two feet. To the temporal side of the globe there was a large subconjunctival hemorrhage extending to the limbus and at places in the vicinity the cornea appeared to be studded with minute hemorrhages. The field of vision was about normal. The pain in and about the eye was very severe. The fellow eye was absolutely quiet and normal in every detail; vision equaled 6/6 plus. A careful inquiry into the patient's previous history failed to ascertain any cause for the attack. His habits were the best; he drank and smoked only very moderately. There was no venereal history. It was evident that one had to deal with a case of primary glaucoma of the hemorrhagic type. As iridectomy was not advisable, the usual medical remedies, eserin (physostigmin), one grain to the ounce, combined with cocain, dionin (ethyl-morphin hydrochlorid) 5 per cent., leeches and hot fomentations had to be relied on.

January 15, 8:30 a. m.: The patient had a good night and was now free from pain; T + 3; cornea hazy; anterior chamber of normal depth; pupil widely dilated, but hyphema less marked.

January 15, 8:30 p. m.: Condition was the same, except that the blood in the anterior chamber has absorbed, and cornea clearing and sensitive. T + 3; vision equaled fingers at six feet. On careful repeated chemical analysis and microscopic examination the urine proved normal.

January 16, 8:30 a. m.: The pupil was still dilated, but tension slightly lower than the day before. Cornea was bright and vision equaled 3/60. Ophthalmoscopy was now attempted, but owing to the cloudiness of the vitreous, the details of the fundus were not sharply defined, although the disc could be seen and appeared hyperemic, swollen and the vessels full. The retina could not be studied.

January 16, 8:30 p. m.: Since noon the patient had had some pain; the cornea was again steamy and vision reduced to fingers at two feet. The field was good. Paracentesis of the cornea was advised and concurred in by Drs. Casey Wood and Thomas Faith. On account of the previous hyphema and the still present subconjunctival hemorrhage, iridectomy was advised against.

January 17, 8:30 a. m.: The patient's condition was the same. Under 10 per cent. cocain anesthesia, the anterior chamber was slowly emptied with a paracentesis needle, and immediately on the escape of the aqueous small rivulets of blood made their appearance on the iris. Tension was slightly lower than normal, and iris somewhat contracted. Physostigmin was instilled in both eyes and the eye which had been operated on was bandaged.

January 18, 8:30 a. m.: The bandage was removed. Anterior chamber reformed; cornea clear; pupil dilated ad maximum. T + 3, and vision equaled fingers at one foot. Hemorrhages were absorbed. A posterior sclerotomy was now made between the superior and external recti muscles under 10 per cent. cocain, and about 10 minims of a clear, straw-colored fluid escaped. The eye was very soft. Calcium chlorid in fifteen-grain doses was given every three hours, with a view of increasing the coagulability of the blood. In addition, nitroglycerin was given, 1/100 grain, four times a day.

January 19, 8:30 a. m.: T + 3. The eye was free from pain; the pupil fully dilated; the field good. The vision equaled fingers at one foot. Small hyphema present and the cornea was slightly hazy.

January 19, 2:30 p. m.: Hemorrhage disappeared. Dr. W. H. Wilder in consultation agreed with me in still holding out against an iridectomy. A combined paracentesis and posterior sclerotomy between the inferior and external recti muscles was made, under 10 per cent. cocain. Directly after the sclerotomy, bright red blood flowed into the lower part of the anterior chamber, appearing to come from the region of the iris root. The eye was very soft.

January 20, 8:30 a. m.: The bandage was removed. The cornea was clear; hemorrhage absorbed; pupil widely dilated; no pain.

January 21, 9 a. m.: The patient's condition was unchanged. The use of physostigmin, 3 grains to the ounce, was begun.

January 21, 2 p. m.: T + 3. The pupil was slightly contracted; now about 4 mm. in diameter; was still free from pain excepting after instillation of physostigmin. Blood pressure and coagulation time were taken by Dr. Adolph Gehrmann of the Columbus Laboratories, who found blood pressure 95 mm., pulse 80, coagulation time two to three minutes. The blood pressure was taken every day following for a week, and never went higher than 115 mm.

January 22, 8:30 a. m.: Condition was as noted yesterday afternoon.

January 23: The pupil about the same; tension slightly lower. Physostigmin was increased to 4 grains to the ounce.

January 24: Pupil was 4 mm., but there was a perceptible diminution in tension; cornea clearing.

January 25: The condition was unchanged.

January 26: The cornea was bright. The patient counted fingers at three feet: there was no change in tension from that last noted. Owing to the cloudiness of the vitreous, a view of the fundus could not be obtained.

January 29: The pupil was 2 mm.; tension + 1.

January 30: The tension was normal; field was taken (Fig. 1) and the eye transilluminated for a possible tumor, but found negative. The patient counted fingers at one foot.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

February 4: The eye was nearly white; the tension normal; vision, 6/60; the pupil 3 mm. in diameter. This condition remained until February 11, 1908.

February 12, 8:30 a. m.: At about 4:30 p. m., February 11, there was some pain in the eye, which continued during the night, but the patient attributed it to the use of physostigmin. Examination now showed a new atack. The cornea was steamy; tension + 2; pupil about 4 mm. in diameter; the anterior chamber of same depth as its fellow. Iridectomy was now advised as a last resort, and the patient made aware of the possible danger. Operation was done under 10 per cent. cocain anesthesia, and a broad iridectomy performed with a Landolt keratome without a mishap.

February 13, 2 p. m.: The patient had been very comfortable; was free from pain. The bandage was removed; the cornea was clear: the anterior chamber reformed. Tension was slightly subnormal. The pupil was 4 mm.

February 16: Tension was normal; the eye quiet; physostigmin was reduced to 1 grain to the ounce.

February 17: The condition was the same. With the ophthalmoscope numerous large clots were seen floating in the vitreous, but nothing further could be distinguished; the patient was given syrup of hydriodic acid.

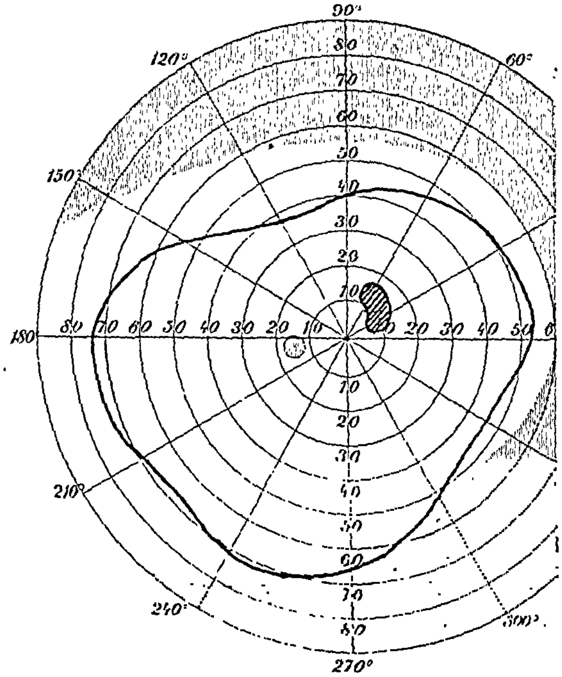

Fig. 1.—Field of vision for white (left eye), taken Jan. 30, 1908. Bright morning. Pupil 3 mm. in diameter. Disc, 1 cm.

February 27: The condition was the same. The vitreous had cleared so that the location of the disc with vessels could be made out. The vision equaled 6/60.

March 1: I did not see the patient from February 27 until this day. Tension was normal, but there was a broken ring of pigment on the anterior capsule, and one corner of the nasal pillar of the coloboma adherent to capsule. Physostigmin was stopped.

March 11: There was no change in the eye until this day, when a dust-like exudate was found on Descemet's membrane. Tension was slightly above normal; cornea clear.

March 12: The patient had pain during the night. The cornea was steamy; tension + 2. The use of pilocarpin was begun.

March 13: Tension was normal. The cornea was clear; keratitis punctata well marked.

March 14: Up to this date the right eye had been absolutely free from any discomfort, but this day there was a fine ciliary injection, some lachrymation, and a feeling of discomfort. Tension was normal. On examination with a loupe, numerous fine dots were seen on Descemet's membrane, which stained deeply with fluorescin. Right eye vision equaled 6/5 minus. Accommodation was impaired. The disc was slightly hyperemic and the vitreous hazy. The left eye tension was normal. The vision equaled fingers at four feet. With these conditions, enucleation of the left eye was immediately advised and done under ether anesthesia.

March 14: Treatment was given, consisting of mercurial inunctions, pilocarpin sweats, sodium salicylate, dionin 5 per cent. in right eye.

March 28: Exudate was absorbing on Descemet's membrane; there were large masses of exudate in vitreous. The disc was slightly hyperemic. Tension was normal. Vision equaled 6/7. There was a large subconjunctival hemorrhage in stump of enucleated eye.

April 18, 1908: Right eye vision was 6/6 plus; a few very fine spots of exudate were still visible on Descemet's membrane, with the loupe. The vitreous opacities were smaller; eye accepted + 0.75 D sphere; vision equaled 6/6.

February 23, 1909: The external eye was normal; the vision equaled 6/5 —. Some vitreous opacities were still present and a few very fine dust-like opacities were still remaining on Descemet's membrane.

MICROSCOPIC REPORT

The eye was given to Dr. E. V. L. Brown for anatomic study, and he has submitted the following report:

"The specimen (Lab. No. 264) was fixed in formalin followed by Zenker's fluid, and was cut in an anterior and posterior half, the anterior half sectioned throughout the area of the coloboma and the posterior sectioned horizontally. Some 400 serial sections of each half were made and every fifth or tenth stained.

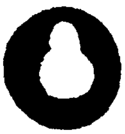

Fig. 2.—Anterior half of left eye as seen from behind (exact size).

"Seen from behind, the anterior half presented the appearance sketched in Figure 2; the lens is clear, the pars plicata and corona ciliaris are *in situ*, the processes and plicæ apparently normal and regular in arrangement. An accurate sketch of the position and extent of the operative coloboma area was made, because, clinically, a perfect and entirely effective iridectomy had been performed. No portion of the root of the iris could be seen behind the opaque corneoscleral limbus, either before or after the eye was taken out; yet, as shown in the sketch, the gross specimen shows that a good 0.5 mm. of the root of the iris had not been removed by the operation.

"*Microscopical Study.*—In a section through the center (section 205; see photomicrograph, Fig. 3) the curvature of the cornea and sclera are seen to be about the same. The cornea shows a tendency to collapse, and the center is slightly thinned to 0.5 mm. The epithelial layer is narrowed and elevated into empty vesicles in a number of sections; some of these (as section 110) have ruptured and left Bowman's membrane exposed. The outer cells are compressed and keratosed; the inner cell nuclei are thrown slightly forward or 'stilted'; many leucocytes are seen among the cells, esepcially in the upper portion of the cornea. Bowman's membrane is everywhere a trifle wider than normal and shows numerous delicate nerve canals as cross-striations. The body of the cornea is normal, although the very center takes a lighter eosin stain than usual. A narrow densely nucleated scar, corresponding to the site of the corneal section for the iridectomy, lies at the upper limbus: it commences just above the end of Bowman's membrane and runs obliquely from without, inward and downward at an angle of 45 degrees from the end of Bowman's membrane to a point 2.3 mm. central to the upper end of Descemet's membrane. Here at its inner end the cut layers of the cornea gape slightly, so that the anterior chamber bays forward into the back part of the cornea. The defect has the form of a narrow wedge, and both lips are bordered by the curled-up ends of Descemet's membrane; the surface of the triangle is covered by a single layer of new endothelial cells directly continuous with those lining the anterior chamber. The anterior end of the scar grades off into a mass of proliferating endothelial and stroma cells just beneath the limbus epithelium. A closely knit matrix of new stroma cells has definitely healed together the anterior three-fourths of the wound. In more temporal sections (see section 185) the defect produced by the operation extends forward as a narrow sinus one-half the way to the surface of the cornea. But the lips of the wound anterior to the sinus are so firmly knit together that no 'filtration cicatrix' could have been present. In sections still more temporal (such as section 110) several well-filled vessels of small size are seen running through the scar and are surrounded by considerable numbers of round cells. In all sections through the scar the surface epithelium is normally reformed, but nowhere dips down into the wound tract; the final repair has been effected entirely by proliferation of the fixed corneal cells. The lower one-half of Descemet's endothelium is thinned and the cells in part disintegrated; many clumps of small round cells and pigment detritus are found on the posterior surface of the cornea; some sections (Cf. section 110) showing as many as six clumps in the lower angle of the anterior chamber.

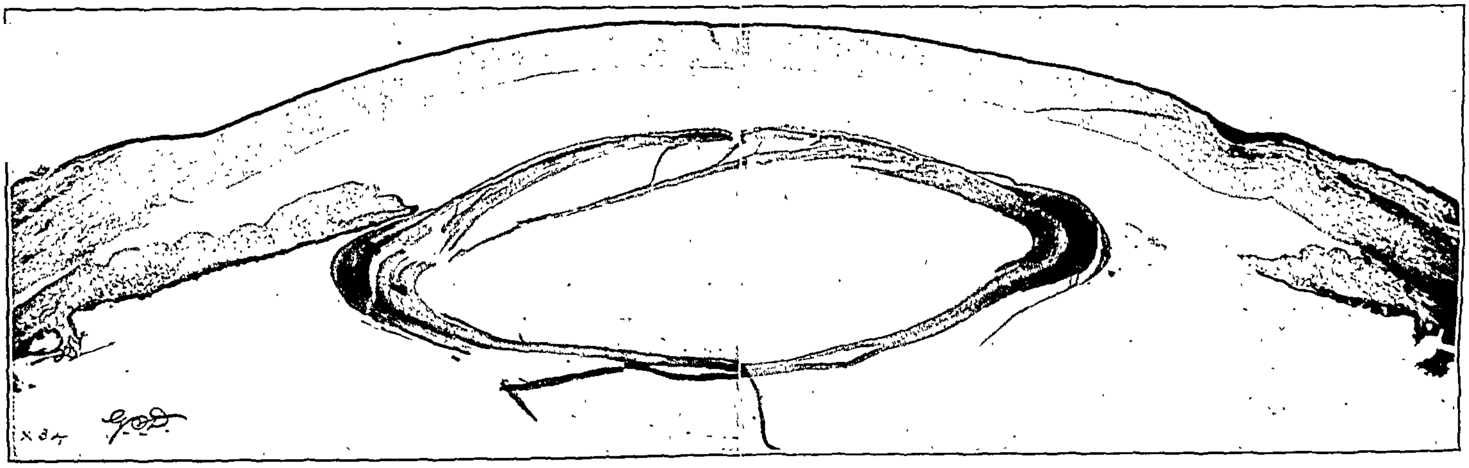

Fig. 3.—Section of left eye (photomicrograph, magnified 17 times). The upper limbus with the corneal incision and iridectomized iris lie to the right. One notes that: (1) The cornea is thinned; (2) the lens is thrown forward; (3) the chamber is shallow; (4) the sinus angles are open; (5) the trabeculum corneosclerale in infiltered on each side; (6) the canals of Schlemm are open; (7) pigment epithelium is detached from the iris pupil zone and adherent to the lens capsule; (8) the iris stump above is 1 mm. long.

"The conformation of the anterior chamber and the sinus angles deserve special description. The entire lens system and iris body have been displaced forward, narrowing the chamber as a whole; indeed, the anterior pole of the lens rounds forward through the pupil to such an extent that the space between the anterior capsule and the cornea is reduced to two-thirds of a millimeter. The plane of the iris below is correspondingly thrown forward, and makes an angle of 25 degrees with the transverse axis of the eye in comparison with a normal angle of about 15 degrees. Yet the sinus angles are patent in all sections both above and below, and the fluids of the chamber have free access to the surface of the trabeculum corneosclerale; the angle above is reduced to a narrow slit but is free from cells. The iris below measures 3.23 mm. from the pupillary margin to the circulus major, whereas the iris above has been in a large part cut away by the iridectomy; the iridectomy extends from section 49 temporal to section 213 nasal; the columns are nearly parallel and nowhere in contact with the wound. The stump lies entirely behind and peripheric to the corneal portion of the corneoscleral limbus, corroborating the statement made above that the iridectomy clinically was a very peripheric one: yet accurate measurement of the shortest portions of the stump shows that over 1 mm. of iris, measured from the circulus major to the cut end, is still present (section 143). As stated before, the angle does not show any accumulation of round cells or plastic material in any section; a heavy eosin stain does not bring out more fibrin or albuminous material than would be expected in aqueous reformed after evacuation. What fibrin is present is almost entirely in the lower half of the chamber and disposed along its walls.

"The sinus angle above is wider than that below; the cut end of the iris stump does not reach the equator of the lens anywhere and consequently the iris above has been displaced backward into a position that is even more nearly at right angles to the optic axis than in a normal eye. The iris below is thrown forward so as all but to touch the base of the cornea in many sections; indeed, some anterior root synechia to the back portion of the trabeculum corneosclerale has taken place in the sections which go through the angles just a little temporal to the iridectomy area; sections still more temporal are again perfectly free from any evidence of union between the periphery of the iris and the back part of the trabeculum corneosclerale. Both surfaces are perfectly smooth and sharply defined in all except a few peripheric sections (as, for instance, section 49) which show good-sized pigment masses.

"The anterior half of the iris, trabeculum corneosclerale and canals of Schlemm are infiltrated with round cells; those in the iris are almost exclusively of the plasma cell type and only moderate in amount; the posterior layers of the iris do not show any considerable amount of cell increase; the stroma pigment cells are considerably disturbed toward the iris root both above and below. In most sections the infiltration about the canals of Schlemm is so dense or the cells so changed that only round heavy-staining nuclei are seen and the type of cell can not be made out. Despite this, the lumina of the canals are free and lined by a well-preserved endothelium in most sections and filled with blood in many; the position of the canals can always be readily made out. Further evidence of plastic inflammation of the iris is furnished by deposits of pigment detritus, clumps and short strips of pigmented cells on the anterior surface of the lens capsule. Their exact location and the relations to the pupil border of the iris are of great importance in any attempt to establish an order of pathogenesis in the findings.

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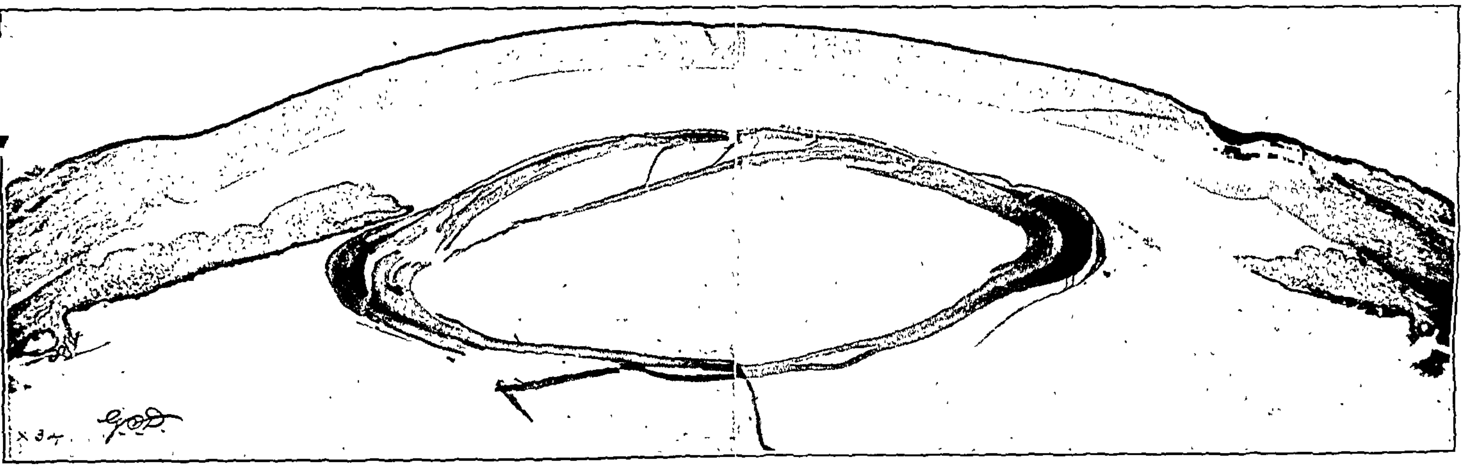

Fig. 3.—Section of left eye (photomicrograph, magnified 17 times). The upper limbus with the corneal incision and iridectomized iris lie to the right. One notes that: (1) The cornea is thinned; (2) the lens is thrown forward; (3) the chamber is shallow; (4) the sinus angles are open; (5) the trabeculum corneosclerale in infiltered on each side; (6) the canals of Schlemm are open; (7) pigment epithelium is detached from the iris pupil zone and adherent to the lens capsule; (8) the iris stump above is 1 mm. long.

"The conformation of the anterior chamber and the sinus angles deserve special description. The entire lens system and iris body have been displaced forward, narrowing the chamber as a whole; indeed, the anterior pole of the lens rounds forward through the pupil to such an extent that the space between the anterior capsule and the cornea is reduced to two-thirds of a millimeter. The plane of the iris below is correspondingly thrown forward, and makes an angle of 25 degrees with the transverse axis of the eye in comparison with a normal angle of about 15 degrees. Yet the sinus angles are patent in all sections both above and below, and the fluids of the chamber have free access to the surface of the trabeculum corneosclerale; the angle above is reduced to a narrow slit but is free from cells. The iris below measures 3.23 mm. from the pupillary margin to the circulus major, whereas the iris above has been in a large part cut away by the iridectomy; the iridectomy extends from section 49 temporal to section 213 nasal; the columns are nearly parallel and nowhere in contact with the wound. The stump lies entirely behind and peripheric to the corneal portion of the corneoscleral limbus, corroborating the statement made above that the iridectomy clinically was a very peripheric one: yet accurate measurement of the shortest portions of the stump shows that over 1 mm. of iris, measured from the circulus major to the cut end, is still present (section 143). As stated before, the angle does not show any accumulation of round cells or plastic material in any section; a heavy eosin stain does not bring out more fibrin or albuminous material than would be expected in aqueous reformed after evacuation. What fibrin is present is almost entirely in the lower half of the chamber and disposed along its walls.

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Dr. Walter L. Pyle, Philadelphia: Through the courtesy of Dr. Frank, a year ago I had an opportunity to examine this patient. From the clinical history and study of the physical signs at that time, I believed the case to be one of sympathetic affection, and despite the absence of the characteristic microscopic findings described by Fuchs, I am still of that opinion.

Dr. H. Gifford, Omaha: It seems to me that it is altogether premature for us to lay down a microscopic diagram of what we consider to be the findings of sympathetic ophthalmia and say that if the clinical picture, no matter what it is, does not give microscopic findings corresponding with the diagram it is not sympathetic ophthalmia. Remember we do not know what sympathetic ophthalmia is. The idea is wrong. Here is an eye that had abundance of chance to get infected. Several openings had been made. We find the evidence of iridochoroiditis. Whether it was of a kind to produce sympathetic ophthalmia we do not know. We have to diagnose sympathetic ophthalmia from the clinical picture and not entirely from the microscopic findings at the present time.

Dr. E. V. L. Brown, Chicago: I rise to defend my anatomic findings and their significance in this case. First it is true, as Dr. Gifford says, that we do not know the organism which causes sympathetic inflammation, but this does not lessen the value of anatomic facts. The same is true of sarcoma, yet we know when sarcoma is present and when it is not, and from the anatomic facts alone. We must accept Fuchs' statement as to whether the anatomic findings in sympathetic ophthalmia are constant or not. His statement is that in 181 eyes he made a clinical diagnosis either of sympathetic inflammation or of sympathetic irritation and from the anatomic study of these cases made up his mind as to a characteristic anatomic finding. Then, without reference to the clinical histories, he divided the specimens into two groups and, so to say, said of the first group: "Each of these 25 eyes caused inflammation of the fellow eye." And of the second group: "None of these 157 eyes caused inflammation of the fellow eye." Referring then to the clinical records, he found that 24 of the 25 eyes had caused sympathetic inflammation and that none of the 157 had done so. Now, it is true, this is not a constant finding, but in my opinion one must either doubt Fuchs' word or admit he has made a most remarkable contribution. These findings have been corroborated by others and in a recent number of the *Archives of Ophthalmology* Fuchs reiterates his conclusions.

I have shown the specimens of this case to Professor Fuchs as well as to Professors Salzmann and Wintersteiner and to Mr. Treacher Collins and two well-known members of this Section, and my report is made in keeping with the remarks of these men. I would not have had the temerity to present simply my own opinion of the case. Yet I have studied the facts with an open mind. I saw the patient before the eye was removed, and my clinical diagnosis was sympathetic inflammation. The eye had had many openings made into it: there was ciliary injection and there were also precipitates on the back of the cornea of the fellow eye. But many traumatized eyes do not cause sympathetic inflammation, and no one has yet described a picture of the inflammation in the second eye so typical that we may cover the primary eye and diagnose sympathetic inflammation from the appearance of the second eye alone. A perforating wound and precipitates on the back of the other cornea do not make a diagnosis of sympathetic inflammation, and unless we go back to the dark ages we must change a clinical diagnosis when reliable anatomic facts refute it. I hope Dr. Frank will state, in summing up, why he still considers this case one of sympathetic inflammation.

Dr. G. H. Price, Nashville: Dr. Risley called attention to a very significant point in this particular case, when he said it was glaucoma with hemorrhage. It is a well-known physical fact that in a locomotive boiler which has been carrying a pressure of 200 pounds to the square inch and in which the pressure has run down to 30 pounds or less, there may be an explosion due to some defect in the mechanism by which this pressure is suddenly released. Or if in a boiler that is carrying a temperature of several hundred degrees, and a steam pressure of 200 pounds, a valve is suddenly opened which liberates the pressure instantaneously, the water remaining in the boiler, which is above the steaming point, is immediately converted into steam and the result is an explosion of the boiler. This is the same principle of the high-tension hemorrhage in glaucoma when we do an iridectomy; the tension being immediately released, a hemorrhage occurs because the high blood pressure suddenly overfills the vessels, causing the walls to give way, since the restraining influence of the intraocular pressure is lost. There is another very simple physical experiment that perhaps bears some relation to the condition we find present in some of these cases. If we take a flask and fill it half full of water and bring it to the boiling point and allow it to boil a few minutes, and while boiling remove from the flame and cork it, the ebullition ceases. If we then apply cold to the flask the supernatant steam is condensed, the tension lowered and the water boils again. There may be hemorrhages, depending on these two physical principles. In the case reported, it was a low-tension hemorrhage, a venous hemorrhage, and as Dr. Risley has suggested, this in all probability was due to some autoinfection or autointoxication somewhere, and the condition set up in the other eye, for which the enucleation was made, was probably brought about by just such a condition. Now if we had reached the point where we could determine whether we had a glaucoma which was due primarily to a marked increase in tension *per se*, then we would be in a position to determine what was the best procedure. In the case reported by Dr. Bull, of exceedingly high tension, if he had made an iridectomy in that case the chances are that he would have had considerable hemorrhage, due to the sudden release of the restraining influence on the retinal vessels, and so the thing to do was to gradually decrease the tension by paracentesis. But in Dr. Frank's case it was due to an entirely different etiologic factor and the relief of pressure, unless it was total, had no effect on it.

Dr. F. H. Verhoeff, Boston: I have examined many cases of sympathetic ophthalmia and before Fuchs published his work had come to the conclusion that there was a perfectly characteristic lesion. There is one point, however, connected with the histology of it that to me is not absolutely clear. The essential lesions consist of focal collections of lymphoid cells in the centers of which epithelioid and occasionally giant cells appear. Now in the early stage it is a question whether epithelioid cells are present, or if so, whether they could be distinguished from the lymphoid cells. Thus, going by Fuchs' description, when examined in this stage we must say the case is not one of sympathetic inflammation, although strictly speaking we would be wrong. However, I have never seen a case of sympathetic ophthalmitis develop after an eye showing this histologic picture was enucleated, although I have examined many such. At this early stage, therefore, if such it is, it is safe to say that the other eye will not become affected. In regard to Dr. Frank's case, I would like to suggest that the most obvious explanation is that it was a case of serous iritis complicated by glaucoma. Probably the condition had been present sometime without being noticed by the patient. Afterward, as is usual, the other eye became affected.

Dr. Mortimer Frank, Chicago: I accept Dr. Risley's criticism of the title of my paper, but until Fuchs' findings are universally accepted as pathognomonic of sympathetic inflammation I still consider my case one of sympathetic ophthalmia according to the clinical symptoms described in the text-books, and I am willing that the pathologists should fight out the diagnosis by *microscopic section*.

HAIR BALL OR HAIR CAST OF THE STOMACH AND ITS OCCURRENCE IN CHILDREN

REPORT OF TWO INSTANCES WITH BIBLIOGRAPHY AND SYNOPSIS OF CASES REPORTED TO DATE*

W. W. BUTTERWORTH, M.D.
Professor of Pediatrics, Medical Department, Tulane University
NEW ORLEANS

The occurrence of bezoars in various domestic animals is not uncommon and these strange concretions have been esteemed alike for their antidotal properties against poisons, and likewise because of the efficacy or charm they were supposed to possess against the plague, malignant fevers, vertigo, epilepsy, dysentery and other ailments.

Certain concretions likewise occur in man as a result of the ingestion of indigestible substances; thus Tidemand[1] reports a gastrolith or stone, probably of some resinous material and weighing 15 gm. Friedlander,[2] Vonnegut,[3] and Manasse[4] each record cases of gastric shellac calculus, while Ewald[5] quotes an instance of a carpenter who mistook his varnish for liquor and drank it; it formed a gastrolith. Outten[6] has reported a case of double gastrolith.

Concretions of vegetable origin are also occasionally found in the stomach of persons; thus Langenbach[7] and Kooyker[8] relate such instances. In Schreiber's[9] patient, a peasant woman, a phytobezoar was found at operation. The mass was composed of the fibrous roots of a plant (*Schwarzwurzel*) which is said to be a popular remedy for all sorts of ailments in Germany.

In Quain's case[10] a mass weighing 4 pounds and consisting chiefly of cocoanut fiber was taken from the stomach at autopsy. It had caused perforation and peritonitis. More fortunate was a woman mentioned by Capelle[11] who vomited a foreign body formed exclusively of vegetable débris and thus discredited a diagnosis of cancer of the stomach which had been made.

The most remarkable of these singular concretions, however, is the hair ball, or, more correctly speaking, the hair cast of the stomach, and sometimes of the intestines also, and, while they can not be called rare conditions, at least they are of infrequent occurrence, for, after a somewhat thorough search, I am able to find only 42 cases recorded to date. Oddly enough thirty-nine of the patients were females, the youngest of whom, my patient, was 8 years old at death, while the oldest person was an insane man, aged 43.

Curiously enough, very few instances of trichobezoar are found reported in German literature, the habit of eating hair apparently being more prevalent among English-speaking people, which led Bussell to say that "the eating of hair seems to be a favorite occupation of English women."

The history of my patient is as follows:

CASE 1 (BUTTERWORTH'S).—*Patient.*—Pearl F., white, aged 8, a native of Mississippi. Her father is living and well at 53; her mother living, 38 years old, has had bowel trouble all her life and does not enjoy good health. They have had eight children: Pearl, the subject of this history, and seven who are living. All look sickly, except the two oldest girls, 16 and 19 years old, respectively. The five younger children are boys and are 4, 6, 8, 11 and 13 years old; they are anemic and emaciated, but are never sick in bed. Examination of their feces show that seven of the nine members of the family have hookworm infection.

History.—The patient was sickly from birth until about 2 years of age, after which time she was in apparently good health, though pale and anemic all her life. She had ground-itch every summer since the age of 3. She was not so well for the last two years, though she had no definite ailment. A little more than a year before her death she complained of extreme weakness; would vomit frequently, but never any blood. The stools were dark in color and contained much mucus. She was known to eat sand and dirt for several months prior to her last illness. Not a member of the family suspected that she was eating her hair, which was worn long and loose over her shoulders. Her mental condition was not abnormal, yet she had odd ways peculiar to herself. She was very shy and secretive, good-natured, very placid and seemed to lack power of concentration.

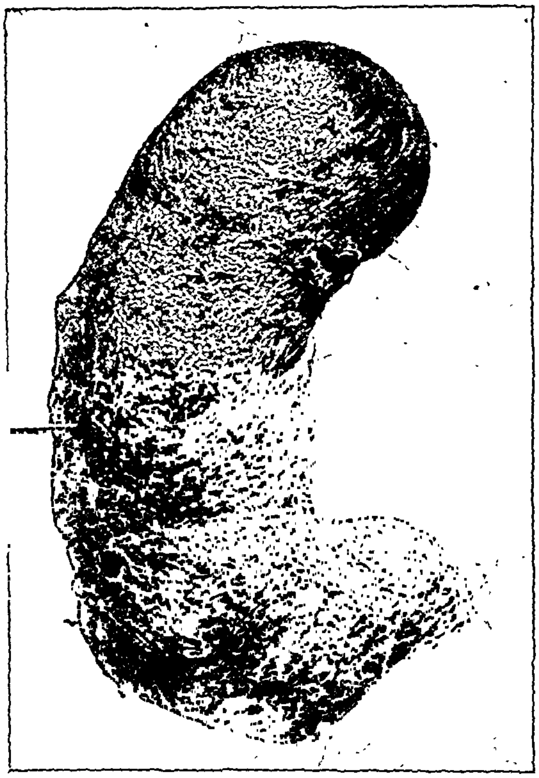

Fig 1.—Hair cast of stomach. Butterworth's case.

Present Illness.—The patient had complained of abdominal pain for about two weeks, when she was seen (Nov. 3, 1908) by Dr. N. W. Fountain of Nicholson, Miss., to whom I am indebted for these notes. He discovered a firm crescent-shaped swelling in the epigastric region. The temperature was 104 F., respiration 40, and pulse 148 per minute. The patient was twice given a cathartic without satisfactory results. On the fourth day of her illness, 12 grains of calomel with soda were given, after which she had several loose copious movements. Temperature dropped to normal, respiration to 20 and pulse to 108. On the fifth day the blood was examined and tertian malarial organisms were found. The feces contained an immense number of uncinaria ova. The patient was given quinin, phenacetin and stimulants.

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* *Read before the Section on Diseases of Children, of the American Medical Association, Atlantic City, June 10, 1909.*

1. Tidemand: Norsk. Mag. f. Lægevidensk., 1865, p. 80.
2. Friedlander: Berl. klin. Wchnschr., 1881, No. 13.
3. Vonnegut: Deutsch. med. Wchnschr. 1897, No. 26.
4. Manasse: Berl. klin. Wchnschr, 1895, p. 723.
5. Ewald: Ztschr. f. klin. Med., xiv, No. 3. (Ewald's 1902 Ed., p. 376.)
6. Outten: Med. Fortnightly, St. Louis, Aug. 15, 1894.
7. Langenbach: Verhandl. der deutsch. Gesellsch. f. Chir., 1881, ix Cong., p. 54.
8. Kooyker: Ztschr. f. klin. Med., 1888, xiv, 203; abstr. Sajous' Ann. of Universal Sciences, 1889, vol. 1, c-23.
9. Schreiber: Mitt. a. d. Grenzgeb. d. Med. u. d. Chir. 1896, 1, 729.
10. Quain: Tr. Path. Soc., v, 145.
11. Capelle: Jour. de. méd. de Bruxelles, February, 1861, p. 147; Hemmeter: Diseases of the stomach, Ed. 3, p. 612.

Examination.—The patient entered the Charity Hospital (New Orleans, La.) on the eleventh day of her illness, when it was noted that she was very weak, emaciated and anemic. She rested on her side in bed with the knees bent and thighs flexed on the abdomen. All visible mucous membranes were pale. Examination of the chest was negative except that there was a pronounced hemic murmur. The abdomen was distended, somewhat tender and tympanitic. There was a firm somewhat irregular cucumber-shaped swelling occupying the epigastric region and losing itself in the hypochondriac region of the left side. The mass was only very slightly movable; firm continuous pressure caused slight indentation for a time. The child complained of pain after manipulation. The liver was slightly enlarged; the lower border was palpable one inch below the costal border; it was not sensitive; was smooth and hard. The spleen was not palpable in its normal region. There was considerable edema of the feet and legs. The urine was negative for sugar, albumin and indican, but contained a small amount of pus with hyaline and granular casts. Numerous uncinaria ova were found in the stools, as well as blood and pus. The blood was free from plasmodia. Hemoglobin was below 15 per cent.; leucocytes, 20,000 per cm. Differential count:

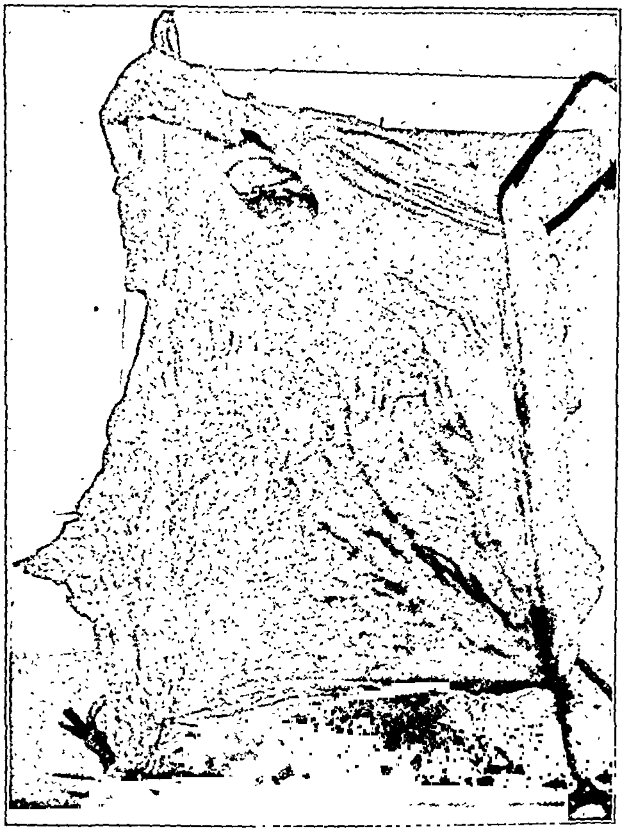

Fig. 2.—Stomach, Butterworth's case, showing ulcer.

Large mononuclears, 4 per cent.; small mononuclears, 13 per cent.; polynuclears, 81 per cent.; eosinophiles, 1 per cent.; transitionals, 1 per cent. Polychromotophilia, poikilocytosis and normoblasts are noted in the report. A von Pirquet test was negative.

Course of Disease.—The patient's condition was such that an exploratory operation was not considered justifiable. During the last two weeks of life she ran a constant temperature usually between 100 and 101; had a fairly good appetite; had daily several dark-colored, offensive stools containing mucus and blood. She was not nauseated, neither did she vomit. At times she complained of severe abdominal pain, which was paroxysmal in character and was so violent that it caused her to cry out aloud. She was intelligent and singularly placid. It was remarked later that several of the nurses had observed that she would twine slight strands of her hair (which was rather long and worn loose) around her fingers from time to time. No one saw her put any hair into her mouth and her family denied all knowledge of the habit. Examination of her scalp after death, however, showed several irregularly bald patches. She gradually grew weaker, became delirious, edema increased, and death occurred after an acute illness of twenty-seven days. Thymol was given on three occasions with negative results. In this connection it is to be noted that when the stomach was opened at autopsy, the contents, viz., mucus, food and hair ball, had a pronounced thymol odor. The last course, 15 grains, divided in two doses and given one hour apart, was taken forty-six hours before death.

Autopsy.—This was held by Dr. O. L. Pothier, pathologist to Charity Hospital, an abstract of whose report follows:

Body of white female child, which was still warm and was anasarcous. The lungs and heart were apparently normal. The abdominal cavity was found to contain fluid which seemed to be purulent. The stomach was filled with a hard mass which was resistant to touch, and measured 16 x 8 x 5.5 cm. On section a mass of hair was found which filled the whole cavity of the organ and resembled a cast of viscus. It was free in the stomach and was not adherent to any portion of the mucous membrane, which was covered by a thick coating of glairy mucus. In a dry state the hair cast, which was a fairly accurate mold of the stomach, was 4 inches wide at the esophageal end and had a fairly uniform thickness of 1¾ to 2 inches. It weighed, dry, 3¾ ounces, and was composed of human hair of a texture and color corresponding to patient's. Many of the hairs measured 15 to 18 inches in length. Incorporated throughout the mass were small particles of husks of grain and fruit. The mucous membrane of the stomach was normal except at a point 2 cm. from the pyloric extremity and along the lesser curvature and anterior wall of the organ. At this point there was a chronic circular ulcer about one inch in diameter which formed an abscess cavity and which was firmly adherent to the under surface of the right lobe of the liver. Pylorus and cardiac extremities were patulous. On examining the small intestine, several hundred uncinaria were found imbedded in the mucous membrane; very few were present in the duodenum, the greater number being in the jejunum. They progressively diminished in number in the ileum, none being found beyond the middle third of this portion of the intestine. There was considerable blood and mucus in the small bowel. The mucous membrane was of a shaven-beard appearance, and presented many points of punctate hemorrhage, particularly in the jejunum. The spleen was adherent to the diaphragm and to the posterior wall of the abdomen, and presented two superficial gangrenous areas, one at the lower pole which measured 4.5 by 3 cm.; the other along the anterior border and upper pole measured 8 by 2.5 cm. The kidneys and liver showed a parenchymatous degeneration.

The habit of swallowing hair is most often commenced in early life. Lyons[12] relates that a boy, 2 years of age, would pick at the carpet, woolen garments or anything of a hairy nature. He had convulsions; was given a cathartic, and passed by rectum a ball of hair about the size of a silver dollar, together with some smaller masses. He had no more convulsions. Jacobson's patient[13] acquired the habit at 2½ years of age: Allen's[14] Best's,[15] and Pollock's,[16] and the patient in the British Medical Museum case[17] at the age of 3, while it is recorded that Ritchie's[18] and Baudamant's[19] patients had been addicted to eating hair all their lives. In 75 per cent. of the collected cases the patients were known to have acquired this habit during childhood. In the majority of these instances it is not clear why such a perverted appetite existed; it is not noted that the presence of intestinal parasites played any important part in the etiology, for I find only two such instances, my own case and Quain's[10]

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[12] Lyon: Boston Med. and Surg. Jour., cxlii, No. 15, p. 385.

[13] Jacobson: A Hair Cast of the Stomach, Med. News, 1901, xxxvi, 245; abstr. The Journal A. M. A., 1901, xxxvi, 596.

[14] Allen, W. L.: A Case of Gastrotomy for the Removal of Hair Ball, The Journal A. M. A., 1896, xxvi, 199.

[15] Best: Brit. Med. Jour., 1869, ii, 630.

[16] Pollock: Proc. Path. Soc., London, 1851-52, iii, 327.

[17] Gould and Pyle: Anomalies and Curiosities of Medicine, 1897, p. 640.

[18] Ritchie: Edinburg Med. Jour., 1849, ix, 931.

[19] Baudamant: Jour. de méd., Paris, 1779, ii 507.

The fact that insane persons are addicted to eating foreign bodies has led to erroneous conclusions; those addicted to eating hair, almost without exception, are apparently mentally sound; demented subjects usually partake of more solid substances, viz., nails, screws, wood, etc. In this series only four patients were reported insane: those in Cobbold's,[20] Campbell's,[21] Gemmel's,[22] and Osler's[23] cases; and, with the possible exception of the last mentioned, all had such extraneous matter as nails, tacks, leaves, cocoanut fibers and twine, in association with limited amounts of matted hair, removed from the stomach.

In fact, Dandois' patient[24] is the only one reported to have been hysterical, while several narrators expressly state that their patients had good, active minds, and that there was not the slightest suspicion of an impaired mentality.

It is probable that the custom of young girls wearing their hair loose, flowing and hanging over the shoulders, *is an important factor* in favoring the establishment of the practice of biting the hair or passing strands through the mouth, or between the teeth. This is most likely the reason why hair bolus is practically confined to the female sex, and to its greatest frequency at an age corresponding to the period in a girl's life when her hair is worn long and loose.

Various reasons are given in explanation of the abnormal appetite; thus Paton's patient[25] ingested her hair "because it was so nice;" Knowsley Thornton's patient[26] had for years been in the habit of "eating the combings of her hair, and her sewing-cotton ends, to clean her tongue;" while Schönborn's patient[27] confessed that she swallowed hers in order "to make her voice clear;" Jacobson's[13] because she rather liked the tickling sensation produced by the hair in its transit to the stomach; another[28] adopted this method with suicidal intent and failed.

The localization of a trichobezoar is influenced by its size; it can be readily conceived that small tufts or mats of hair may be passed through the bowel. The observation of this fact alone suggested the diagnosis in at least three cases—viz., Thornton's,[26] Harvie's,[29] and Rather's.[30] Others were less fortunate in that the migrating concretion either caused intestinal obstruction (Brewster's[31]) or a *fatal perforation* (Ritchie's [18]).

A small concretion in the stomach will assume a spherical or oval form; with increase of size it becomes molded to the contour of the viscus and may overflow into the duodenum (Bruce,[32] Harvie,[29] Allen,[14] Von Bollinger[33]); and even into the jejunum (Pollock[16] and Baudamant[19]); *less frequently the prolongation protrudes* through the esophageal opening of the stomach. *In only one instance* was a hair ball limited to the esophagus (Gemmel[22]).

Most often only one hair bolus is present in the stomach; when two occur they appear facetted and join each other snugly. Such are reported by Wood,[34] Finder,[35] Russell,[36] and Osler,[23] while Day[37] records the only instance I can find of three distinct trichobezoars occupying the stomach.

These tumors vary in bulk and weight. One of the smallest, Pell-Ilderton's,[38] weighed, dry, 2¼ ounces, or about one-third of its original weight. Several were over 2 pounds; O'Hara's,[39] Baudamant's,[19] Dandois',[24] Swain's[40] weighed 5 pounds 3 ounces, while Mermet d'Hauteville's[41] is reported to have weighed about 6 pounds, and after nineteen days of desiccation weighed 2½ pounds; the latter two are the largest known.

The long-continued action of the digestive juices influences but very little the color or general character of the hair ingested; it has been *explained* (Bell[42]) *that* chemical changes occur in the stomach, with the result of deepening the shade of the hair composing the bolus; while the individual hairs are wonderfully pliant and strong, notwithstanding the influence of digestion, perhaps for years.

It is remarkable how little the general health suffers, considering the duration of the habit; eventually the limit of toleration is reached, and Nature protests. Pain is a *fairly constant symptom*; vomiting at some time or other is usual, and yet, considering the sponge-like and absorbent character of the hair cast, it need occasion no wonder if vomiting should not occur. This happened in my case, and, after seeing the character of the foreign body, I could readily understand that she could not have vomited even had she wished to. Hematemesis is *comparatively rare*, while dyspepsia and an abdominal tumor are usually the earliest and most constant of symptoms.

Alternating attacks of constipation and diarrhea are the usual rule; eventually the breath becomes exceedingly offensive and malodorous; anemia grows more pronounced, ingestion of food more difficult, emaciation and weakness more noticeable, and, unless surgical measures are instituted, with rare exceptions (Rather,[30] Stover[43]), death occurs from *inanition or perforation*.

Cancer of the stomach was the most frequent diagnosis; then followed a displaced spleen, floating kidney, fecal impaction in transverse colon and omental tumors.

In 33 cases in which the final results are obtainable 1 patient died following laparotomy, 16 recovered after

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20. Cobbold: Jour. Ment. Sc., 1886, xxxii, 52.
21. Campbell: Jour. Ment. Sc., 1886-87, xxxii, 212.
22. Gemmel: Lancet, London, 1894, ii, 432.
23. Osler: Personal communication from Dr. Maud C. Abbott, Montreal, Canada.
24. Dandois: Bull. de l'Acad. roy. de méd. de Belgique, 1903, xvii, 1031.
25. Paton: Brit. Med. Jour., Jan. 18, 1902, p. 147; quoted by W. Soltau Fenwick, Brit. Med. Jour., ii, 1696.
26. Thornton, J. Knowsley: Tr. Path. Soc., London, 1886, xxxv, 199; Lancet, London, Jan. 9, 1886, p. 57; quoted by Homans, Boston Med. and Surg. Jour., 1900, cxliii, 419.
27 *Schönborn: Arch. f. klin. Chir. (Langenbuch's)*, 1883 xxix, 609; Berl. klin. Wchnschr., 1883, xvii, 260.
28. Wren: Internat. Jour. Surgery, October, 1908.
29. Harvie, J. B.: A Case of Hair Ball in the Stomach, THE JOURNAL A. M. A., 1908, l, 512.
30. Rather: Texas Med. Jour., April, 1906, xxi, 358.
31. Brewster: Boston Med. and Surg. Jour., 1900, cxliii, 395; abstr. Med. Rec., 1900, lxxxvii, 687.
32. *Bruce: Canada Lancet, November, 1901*, xxxv, 123; reported by Cathelin, Bull. Soc. anat. de Paris, iv, 106.
33. Von Bollinger: München. med. Abhandl., 1891, Ser. 1, No. 4; München. med. Wchnschr., June 2, 1891, xxxviii, 383.
34. Wood: Med. Facts and Observations, 1800, viii, 139.
35. Finder: Tr. New York Med. Assn., 1886, p. 1696.
36. Russell: Med. Times and Gazette, London, 1869, i, 681.
37. Day: Brit. Med. Jour., Dec. 20, 1902, ii, 1899.
38. Pell-Ilderton: Brit. Med. Jour., 1907, i, 18.
39. O'Hara (reported by Schlesinger, Medical Club of Vienna, 1899): Wien. klin. Wchnschr., No. 5, 1895; Bull. Soc. anat. de Paris, 1902, iv, 105.
40. Swain: Lancet, London, June 22, 1895, p. 1581.
41. d'Hauteville, M.: Jour. de méd., chir. et pharm., Paris, 1813, xlviii, 147-153.
42. Bell: Montreal Med. Jour., February, 1903, xxxii, 94, 131; also Reference Handbook, vii, 522.
43. Stover: Reported at Amsterdam City Medical Society, 1895; quoted by Harvie, J. B., THE JOURNAL A. M.A., Feb. 15, 1908, p. 513.

operation, 6 died of peritonitis and perforation, 10 died of inanition.

In only five of these cases was a correct diagnosis made prior to operation, viz., Harvie's,[29] Bell's,[42] Paton's,[25] Thornton's,[26] and Stelzner's,[44] and it is to be remarked that the judgment of these men was almost entirely influenced by a knowledge of similar cases. An exploratory operation revealed the true nature of the swelling in several, while 50 per cent. went to the autopsy table for a final solution.

In the light of my recent personal experience I am inclined to think that a most important element in the recognition of these otherwise puzzling abdominal tumors is a fairly active imagination of this condition which occurs most often in young female children.

I append a brief synopsis and bibliography of all cases reported to date, a total of forty-two.

Case 2 (Wood's).—This case is given from the personal recollections of Dr. Hummel: A child, aged about 7 or 8, was accustomed to eat dirt. The parents, having become aware of this habit, were accustomed to shut the child in a plastered room when it was impossible to keep it under observation. The child began to pick the plaster from the wall and ingest it. This went on for quite awhile. The child became cachectic and lingered in an anemic condition with gastrointestinal disturbances for perhaps a year.

Autopsy.—Death finally occurred, and, the symptoms in the case having puzzled the physician, a necropsy was done, and the stomach was found to contain a ball of cattle hair about as large as a hen's egg. It was then recalled that plaster had been eaten by the child, and that the hair found in the stomach had been ingested with the plaster months before.

It may be explained that the house in which the child had been kept was of antebellum days, and that it was the custom of those days to incorporate cows' hair from tanneries in the plaster used on the walls of dwelling-houses in order to give it consistence and to keep it from crumbling. It is readily realized, then, that the child had taken in the hair while eating the plaster from perverted taste. This case occurred in the practice of Dr. Wood of Shelbyville, Tenn., and the narrator merely has rather indefinite recollections of the circumstances of the case, for at the time he was himself a small boy.

Case 3 (Harvie's[29]).—A girl under 10 years, well nourished, always a moderately nervous child, bright in her school studies, began picking at carpets and woolen materials before she commenced to walk. She developed an early desire to pick her hair and swallow it. She was almost completely bald from the habit, and her mother noticed small masses of hair in her stools at odd times for many years. She was taken ill with nausea, vomiting and pain. A sausage-shaped mass was found in the epigastrium, which was thought to be impacted feces. A brisk cathartic was followed by a copious purge which contained a small bundle of hair. This with the previous history led to a diagnosis of probable hair ball.

Operation.—A hair-cast was found, which projected into the duodenum about 1¼ inches. It measured 13 inches along its greater curvature, with a circumference of 7 inches. It was composed of hair of varying length, absolutely black and densely packed. There were no definite areas of ulceration. The patient was discharged on the twelfth day after operation completely recovered.

Case 4 (Rather's[30]).—The patient was a girl 9 years old. At the age of 7 it was necessary to clip the child's hair short to keep her from eating it. She confessed to a craving for it, and would secrete herself and indulge her abnormal appetite. For two years "the stomach was easily outlined by palpation and was seemingly as hard as wood." Every few months the child had severe attacks of vomiting. Finally she was given half an ounce of castor oil every three hours for two or three days, and passed three or four rolls of densely matted hair, 2 inches in diameter and 8 inches long, which had little or no feces mixed with them. There was immediate relief and rapid recovery.

Case 5 (Bell's[42]).—A girl, aged 12, for nearly two years had attacks of vomiting, diarrhea and abdominal pain. The vomitus consisted mainly of frothy mucus, with at times particles of food. Six months before operation she had a very severe attack of vomiting and diarrhea, when a mass was felt in the abdomen, and was thought to be an abscess of the liver. The patient weighed 49 pounds, was very bright and intelligent. At about 3 years of age it was noticed that she had a habit of breaking her hair with her fingers, and some difficulty was experienced in overcoming the habit. A diagnosis of probable hair ball was made prior to operation.

Operation.—A hair cast of the stomach 18.1 cm. long and weighing 702 gm. was removed, and a small detached mass was seized in the intestine. Some of the hairs were found to be 18 inches long. At a second operation a hair cast of the intestine 8 inches in length was extracted. At a fourth operation a section of the small intestine was found riddled with openings and 2 inches of intestine were resected. Other perforations developed, and it was necessary again to resect a portion of the bowel, when a Murphy button was used, which she passed. Six months after she entered the hospital, after undergoing eleven operations, she was said to be "on the high road to recovery."

Case 6 (Paton's[25]).—The patient was an intelligent girl, aged 9, in whom a lump was accidentally found in the epigastric region. As she was known to have eaten hair and other similar substances since she was 3 years old, and had only been broken of the habit recently, a hair ball was diagnosed. There were no gastric symptoms.

Operation.—On opening the stomach, a mass consisting chiefly of the child's own hair, 7 inches long, weighing 7¼ ounces and having the general shape of the stomach, was extracted. The child recovered without a bad symptom. While the case was under observation, the doctor's cat had vomited a small hair ball and this suggested the diagnosis of hair ball in his patient.

Case 7 (Jacobson's[13]).—A girl, aged 11, had gastric disturbance for two and one-half years. She vomited a good deal of frothy mucus, but never at any time any food or blood. She had colicky pain, was constipated and lived principally on milk. A cucumber-shaped mass was noticed in her abdomen one year prior to operation. She was quite nervous; was an exceedingly bright child.

Operation.—A perfect cast of the stomach was removed, which on section was seen to be composed almost entirely of hair, with an occasional bit of string. The cast weighed 15 ounces. Later she admitted that from the earliest years of her life she had been in the habit of biting off the ends of her hair, which was always worn long enough to be brought to her mouth. At first she thought she did it simply because she was nervous, but later she rather liked the tickling sensation produced by the hair in its transit to the stomach. She made a good recovery.

Case 8 (Schopf's[45]).—A girl of 12, from her fifth year on, had been in the habit of biting her hair. About one year before the time of operation, she began to vomit and had colicky pains in the stomach; a tumor appeared and was diagnosed as a floating kidney.

Operation.—(At this time diagnosis was made.) A hair tumor weighing 160 gm. in a dry state was removed. A long process of the hair cast extended into the duodenum. Good recovery.

Case 9 (Brewster's[31]).—A girl of 10 had a habit of chewing the ends of two curls which were long and hung over her shoulders. She was sick for two weeks with what was thought to be indigestion. After repeated and unavailing attempts to move the bowels, symptoms of complete obstruction came on. In the median line over the bladder was felt a sausage-like mass about the size of half a banana.

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[44] Stelzner: Centralb. f. Chir., 1896, No. 31, supplement, p. 121.

[45] Schopf: Wein. med. Bl., 1899, No. 44, p. 863; abstr. Med. Rec., April, 1900, p. 703.

Operation.—The mass was in the small intestine, and when removed measured 3½ inches long and 4½ inches in circumference. It was composed of long and short hairs firmly matted together. The patient died five hours later.

CASE 10 (STOVER'S[43]).—A girl 11 years of age was in the habit of eating her hair, the temporal region being bald. She was said to have suffered with colicky pains in the upper part of her abdomen for two years. She presented symptoms of incomplete obstruction of the bowels for a period of ten days with rectal tenesmus, and then passed per rectum, with relief of all symptoms, a ball of hair which measured 2 inches in length and 3 inches in circumference.

CASE 11 (ST. GEORGE HOSPITAL MUSEUM[17]).—Gould and Pyle, quoting from the meeting of the British Medical Association, London, 1895, state that in the Museum of St. George Hospital, London, are masses of hair and string taken from the stomach and duodenum of a girl of 10. It is said that from the age of 3 the patient had been eating these articles.

CASE 12 (SCHÖNBORN'S[27]).—A girl, 15 years old, vomited incessantly, and became weak and emaciated. A freely movable swelling occupied, the left half of the abdomen; it was painful at all times. The diagnosis rested between a floating kidney, movable spleen or a growth of the omentum.

Operation.—The stomach was found distended and a mass of hair weighing 281 gm. was removed. It was molded to the form of the gastric cavity and consisted of a network of short hairs felted together. The patient confessed that four years ago she had swallowed the hair in order "to make her voice clear." Recovery.

CASE 13 (DANDOIS'[24]).—A girl, 16 years old, was not in good health from the age of 12, and gradually grew worse, had occasional convulsions, probably had hysteria. A hard swelling was discovered occupying the epigastric region, the motility was something extraordinary; the swelling resembled a fetal head; it was not thought to be the stomach.

Operation.—A compact dirty mass, malodorous and difficult to dislodge, was removed from the stomach; it weighed 1 kilo and measured 45 c.c. from pole to pole; circumference was 25 c.c. It was formed of layers of dark hair of same color as patient's.

Recovery followed.

CASE 14 (ALLEN'S[14]).—A girl, aged 16, had felt an oval and freely movable swelling in the region of the stomach for five or six years. She had lost weight during the last year, had some pain after eating, vomited frequently and had frequent attacks of diarrhea followed by *constipation.*

Operation.—A hair ball removed from the stomach was 17 inches long, including the part that extended into the duodenum, and 8½ inches in circumference at the greater curvature.

After operation patient admitted that she had been in the habit of eating her hair ever since she was 3 years old, and up to two years ago. She had bitten off, pinched or pulled out the hairs which she rolled around her finger into a ball or loop and then swallowed. Recovery ensued.

CASE 15 (VON BOLLINGER'S[33]).—A girl, aged 16, had been complaining for two and one-half years with symptoms of gastrointestinal catarrh, anorexia, vomiting, abdominal pain, diarrhea, insomnia, and finally only liquids could be ingested. A swelling was present in the epigastrium, which was thought to be a malignant tumor. Death resulted from exhaustion.

Autopsy.—The stomach and duodenum were distended with a great mass of hair measuring 55 cm. long and 11 cm. broad. As a child the patient had been in the habit of pulling out her hair and putting it in her mouth, which she must have swallowed.

CASE 16 (KNOWSLEY THORNTON'S[26]).—A girl, 18 years old, presented very few symptoms. There was a sausage-shaped swelling in the region of the transverse colon. Frequent doses of castor oil brought away a small concretion of hair and fecal matter.

Operation (Gastrostomy).— A hair cast was extracted measuring 9 inches long by 2½ wide, and which weighed 2 pounds. A sponge was unintentionally left in the abdomen, which was recovered by reopening the abdomen on the following day. Recovery followed.

The patient had been in the habit of "eating the combings of her hair and her sewing-cotton ends to clean her tongue." This she had done for about twelve years. Probably this is the first authentic case in which a correct diagnosis was made prior to operation.

CASE 17 (RANZI'S[46]).—A young woman had had the habit of swallowing hairs, threads, etc., since childhood. Her symptoms were referable to the stomach, and there was a history of the passage by rectum of a hair ball four years previously. There was a movable tumor in the abdomen.

Operation.—A concretion composed of hair, thread and rubber bands was found nearly filling the stomach and duodenum down to the ascending position. This, when removed, presented a perfect cast of these organs, weighing, after drying, 440 gm. and measuring 22 cm. in the stomach and 44 cm. in the duodenum; in all, about 24 inches.

CASE 18 (BERG'S[47]).—A married woman, aged 26, had suffered for three years with symptoms of dyspepsia and anemia and with attacks of vomiting of glairy mucus. For two years there had been noticed a swelling in the epigastric region, and it had grown more rapidly during the last six months. In the epigastric and left hypochondriac region was a swelling as large as a hand, with a concave upper and a convex lower borborder. It could not be displaced toward the region of the kidney. The spleen was in its normal position.

Operation.—Laparotomy showed that the swelling was in the stomach and was composed of hair, short and long, forcibly compressed. It was removed piecemeal and weighed about 900 gm. Complete recovery ensued.

The mother of the patient said that when about 3 years old she had a habit of chewing hair, but the patient denied having done so since she could remember.

CASE 19 (RUSSELL'S[36]).—The patient was a woman, aged 31. Her health had been good and she had never suffered from indigestion. She had a severe attack of hematemesis. A large swelling occupied the left side of the abdomen and extended into the pelvis. It was thought to be an enlarged spleen. The tumor was first observed when the patient was 14 and had been gradually increasing in size for the last seventeen years.

Autopsy.—The tumor was found to consist of a great mass of human hair, accurately molded to the shape of the stomach in which it lay. It had drawn down the stomach into a vertical position, so that the pylorus lay in the pelvis. The mass of hair was divided into two unequal portions, accurately fitted to one another, constituting a hard solid mass; it weighed 4 pounds 7 ounces, was 12 inches long, 5 inches broad, and nearly 4 inches in thickness. The mass was divided and found to be composed entirely of human hair intermixed with broken-down particles of food. The hairs constituting the tumor coincided exactly with the hair on the patient's head, both in color and in general character. They were of all lengths, up to 20 inches; most of them of the greater length. Not a single root could be found; all appeared to be broken off. A single small ulcer existed in the greater curvature of the stomach, which otherwise was healthy, except that the pyloric orifice was four times its normal diameter.

CASE 20 (MAY'S[48]).—A woman, aged 26, began to suffer pain, about three years before examination, in the left hypochondriac region, and soon noticed a hard swelling near the navel, a little to the left of the median line. When seen the tumor occupied the situation of a distended stomach; it was hard and slightly movable. The patient looked unhealthy, had lost flesh, and vomited occasionally. She gradually became weaker and died from exhaustion.

Autopsy.—The stomach was found adherent to abdominal wall, and in it was a mass of hair composed of numerous small hairs matted together by mucus. The concretion measured 20 inches in its longest and 12 inches in its shortest circumference, and weighed 26 ounces; when dry it weighed 10 ounces.

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46. Ranzi: Wien. klin. Wchnschr., December, 1905, No. 48; abstr., THE JOURNAL A. M. A., 1905, xliv, 588.

47. Berg, John: Nord. med. Ark., xix, No. 25; Sajous'Ann. Univ. Med. Sc., 1889, i, 23.

48. May: Tr. Chir. Soc., London, 1855; Assn. Med. Jour., London, 1855, ii, 1147.

Inquiry revealed the fact that the patient had been in the habit of swallowing her hair ever since she was 4 years old, a period of twenty-two years. She did not exhibit any trace of mental alienation.

Case 21 (Pollock's[16]).—A young woman, aged 18, had always been delicate, but more so during the last year. For several months she had been suffering from a swelling, about the size of an orange, in the epigastric region. It was not painful on mild pressure, was apparently solid and slightly movable. Following a paroxysm of vomiting she complained of much pain; this recurred on the following day and soon afterward she collapsed and died.

Autopsy.—There was evidence of recent peritonitis. A mass was removed from the stomach and duodenum, which consisted chiefly of long black hair and pieces of strings matted together. That taken from the stomach had a length of 6 inches, a width of 3¾ and a thickness of 2½ inches. The duodenal mass extended into the jejunum; it was 14 inches in length and 2¼ inches in diameter. It appeared that the patient had been known to eat hair since 3 years of age.

Case 22 (Ritchie's[18]).—This was reported by Dr. Steele. A factory woman, 21 years old, had severe and painful vomiting with alternating constipation and diarrhea. A hard swelling was found occupying the whole epigastric space. It was not discovered until after her death that the patient had all her life evinced a morbid appetite for chewing human hair.

Autopsy.—A hair mass was extracted from the stomach, which weighed 21 ounces. It was devoid of a nucleus and seemed composed chiefly of human hair, with here and there small remnants of thread and sponge closely agglutinated with mucous secretion. Near the ileocecal valve, two smaller masses were found, weighing, respectively, ½ ounce, and 1½ ounces, and having the same distinctive characters as the one already mentioned. That portion of the intestinal canal lying in close approximation with the lower concretions were found disorganized and perforated.

Case 23 (Mermet d'Hauteville's[41]).—A girl, 17 years old, often had abdominal pain and irregular fever; had vomited more or less constantly for three years. A swelling of large size of the contour of the stomach and freely movable was present in the epigastrium. She died of inanition.

Autopsy.—On opening the stomach a compact mass of hair was seen extending from the esophagus to the upper jejunum; the central core consisted of the kernel of a nut. The mass was of the same color as the patient's hair. She was almost bald. When first removed, the hair cast weighed about 6 pounds, and after 19 days of desiccation weighed 2½ pounds.

Case 24 (Baudamant's[19]).—This is the earliest reported case of hair ball. It occurred in a boy 16 years old, who was seemingly unable to resist the impulse to pull out and swallow his own hair and that of others also; it is reported of him that he ate all the hair he could find. He had diarrhea, frequent and violent vomiting and fever. An oval mass could be felt a little below the pit of the stomach which became very painful. He died of exhaustion.

Autopsy.—Two masses of hair were discovered; the largest of these filled the stomach and extended throughout the duodenum; this had a cherry-stone for its nucleus. The smaller mass was in the jejunum. The combined weight was 2 pounds and 1 ounce. When dry they weighed 11½ ounces.

Case 25 (Siraud's[49]).—A girl of 16 presented very few functional signs. A hairy mass was removed from the stomach, which weighed 765 gm. and measured 28 c.c. by 7 c.c. in width. The condition had been diagnosed as fibroma, tuberculous peritonitis, splenomegalia or cyst of the pancreas.

Case 26 (Stelzner's[44]).—A young woman 18 years old, habitually bit off the ends of her own hair and of other girls also.

Operation.—Stelzner, who knew of Schönborn's case, suspected hair-ball prior to operation. A hair-ball weighing 180 gm. and the size of a goose egg was found at operation. The patient made a good recovery.

Case 27 (Swain's[40]).—A woman of 20 had had almost daily attacks of vomiting during the last five years. There was a large abdominal swelling, well defined, solid and very movable laterally. It stretched obliquely across the abdomen from the left costal border down into the pelvis; the fingers could be passed around the lower border, between it and the pelvic cavity. It was continued up behind the left costal cartilage by a thick pedicle apparently about 10 or 11 inches in circumference. There was no tenderness on pressure. A tentative diagnosis was made of tumor of omentum or a splenic enlargement.

Operation.—The mass was removed piecemeal from the stomach. Mucous membrane at the pyloric end was studded over with circular patches of granulations about the size of a shilling. Cardiac extremity was healthy. The concretion weighed 5 pounds, 3 ounces. Recovery ensued.

It was recalled that at one time the patient had had a very fine head of black hair, which fell below her waist, and it was noted that on three occasions during her illness she became quite bald.

Case 28 (Cobbold's[20]).—An idiotic, epileptic and hydrocephalic boy of 18 had been in very poor health for more than a year when obstinate vomiting set in, and he died from exhaustion.

Autopsy.—The peritoneum showed no signs of inflammation; the stomach was enormously distended and contained an elongated ball of human hair and horse hair, all closely matted together. The mass in its wet state weighed 2¼ pounds. There were no signs of irritation, inflammation or ulceration of the mucous membranes of the stomach or intestines.

Case 29 (O'Hara's[39]).—Reported by Herman Schlesinger. A woman, 22 years old, was delirious following an attack of grip, during which time she ate her hair. There was no gastric trouble other than continued pain. A swelling was present, about the size of a cocoanut, which was freely movable. This had been diagnosed as a hydatid cyst or a movable kidney.

Operation.—A hair ball was found which filled the stomach and which weighed two pounds. Good recovery.

Case 30 (Wood's[34]).—A young woman of 22, always healthy until about the age of 18, had symptoms of chlorosis, vomiting, constipation, and abdominal discomfort resembling labor pains; passed a small lump of hair by the bowel.

Autopsy.—The abdomen contained a large quantity of dark-colored fetid fluid. Except for the stomach, the organs were normal; the stomach contained two lumps of hair which nearly filled the viscus. The hair in color and texture seemed much like the patient's own, which was noticed to be very short. The total weight of casts when dry was 16½ ounces.

Case 31 (Wren's[28]).—A widow, aged 23, had complained for three months of almost constant pain in the epigestric region, with occasional vomiting. Examination revealed a movable swelling extending down to within one inch of the umbilicus, and up under the ribs and ensiform appendix. Malignant growth was suspected.

Operation (Gastrostomy).—A large mass of hair was delivered from the stomach which weighed 13½ ounces and measured 7½ inches by 5 inches by 1¾ inches thick. After drying, the cast weighed 4 ounces.

The patient afterward stated that because of an illegitimate pregnancy she tried to commit suicide. She pulled her hair out, and swallowed it for that purpose. If so, the hair had been in the stomach for two years and seven months.

Case 32 (Bruce's[32]).—In a non-hysterical woman, aged 26, two months prior to the birth of her child, a swelling which gave no symptoms, was discovered in the left hypochondrium. Twin pregnancy was suspected. The mass persisted after delivery and it was then thought to be a displaced spleen.

Operation.—A hairy mass was removed from the stomach, which weighed 23 ounces and measured 24 inches long and was two inches in diameter, coming to a point in the duodenum into which it extended about 6 inches. The cast consisted entirely of hair twisted and intimately woven together; of a brownish color, and exactly the same shade as that of the patient's. Single hairs were dissected out, ten and twelve inches in length.

Case 33 (Thorburn's[38]).—Reported by Pell-Ilderton. A woman, aged 29, for more than two years had had more or less vomiting after meals; she could usually keep food down if she remained in a recumbent position. The pain was persistent. A mass could be felt in the epigastrium, extending over into each hypochondrium, which rose and fell with respiration, and was freely movable. The patient's hair was scanty and was about 3 inches long.

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[49] Siraud: Soc. de chir. de Lyon, 1901; reported by Cathelin, Bull. Soc. anat. de Paris, 1902, iv, 107.

Operation.—The stomach was opened and a hair ball, in form and contour resembling this organ, was removed. It weighed in the dry condition 2¼ ounces, and measured, length 3¾ inches, depth 2¾ inches, width 1¾ inches.

After the operation the patient was occasionally caught eating her hair, and she admitted having been addicted to the habit ever since she had scarlet fever, fourteen years before.

Case 34 (Best's[13]).—A woman, aged 30, had begun to suffer pain in the stomach at the age of 15, but was able to continue her duties as a domestic until the age of 24. From that time on she was constantly under treatment. A hard nodular tumor could be felt in the epigastrium which was thought to be scirrhous cancer of the stomach. This she stated increased in size. While at work in a harvest field she fainted from violent pain in the abdomen and died seven weeks later.

Autopsy.—A large concretion of human hair was found in the stomach and lower part of the esophagus, forming a mold of the cavities. The mass weighed 30 ounces avoirdupois. Death was due to peritonitis. There was perforation of a chronic ulcer about the size of a shilling, in the posterior wall of the stomach; also three papillomatous excrescences of the mucous membrane existed. These varied in size from a shilling to half a crown. The patient had indulged in the habit of eating hair since the age of 15.

Case 35 (Dickinson's[50]).—Reported by Inman. A woman of 34 died with obscure symptoms. In cleaning her comb she acquired the habit of placing the detached hair in her mouth and swallowed her combings night and morning.

Autopsy.—A hair cast was removed which was matted into a mass of the shape and size of the stomach when distended. The specimen is in the Museum of the Royal Infirmary Medical School.

Case 36 (Schulten's[51]).—A woman, 30 years old, for three years had pain in the stomach and vomited frequently; recently had noticed a hard round swelling in the abdomen. Floating kidney was considered the most probable diagnosis.

Operation.—The hair ball was spherical and weighed 120 gm. It consisted of matted fragments of cow's hair. The patient was engaged in spinning cow's hair and from time to time would moisten the fingers with her tongue and thus ingested small amounts of this material.

Recovery followed.

Case 37 (Carver's[52]).—Reported by Sir William Gull. A married woman of 32, of vile temper and intemperate habits, otherwise mentally normal, became pregnant and vomited unceasingly until she expelled a seven months' fetus. An offensive vaginal discharge continued with intense pain in the abdomen for two days, when she died from peritonitis.

Autopsy.—In the stomach was found a large mass of hair which extended through the pylorus into the duodenum, perforating the small intestine. The concretion consisted of string, thread, cotton, wool and hair of three colors; the latter could be recognized as belonging to the patient and her two children. The weight of the mass when dried was 5¾ ounces.

Case 38 (W. S. Cooper's[53]).—Reported by Finder. A young woman, who had been insufficiently fed in her youth, suffered great pain which was intensified on the slightest movement. She was unable to take nourishment and there were constant efforts at vomiting. A swelling was distinctly seen and felt in the upper abdomen; the mass was hard on palpation. She was supposed to have a malignant tumor and died of exhaustion.

Autopsy.—In the stomach were found two masses whose combined weight was 16 ounces. The concretions were composed of human hair and horse hair, sewing-thread, grasses and plant fiber. Two deep ulcers had almost perforated the stomach.

The specimens are in the Pathologic Museum of the College of Physicians, New York.

Case 39 (Day's[47]).—A woman, aged 37, a brushmaker by occupation, for about three years had noticed a swelling in the left hypochondrium which was slowly increasing in size. The patient had been treated for ulcer of the stomach with hematemesis six years before. She complained of dull aching in the stomach, with occasional acute paroxysmal attacks, accompanied by nausea without actual vomiting. The swelling, which lay just under the left hypochondrium, was as big as a cocoanut, and felt trilobate. Cystic disease of the spleen was diagnosed.

Operation.—The stomach was incised and three separate masses of matted hair were found. They were facetted and evidently shifted their position occasionally. They consisted of black bristles, such as she was in the habit of using for making brushes. Recovery was uneventful.

Case 40 (Campbell's[21]).—A woman, aged 23, had been insane for several years; was thought to have phthisis because of her emaciation and general weakness. She vomited frequently for several weeks before death.

Autopsy.—There was no tuberculous deposit in the lungs. In the stomach was found a mass containing matted hair, portions of blankets, and a hank of fine brown twine unwound. Two feet of this twine extended through the pyloric orifice ito the small intestine.

Case 41 (Gemmel's[22]).—An insane man, 43 years old, had swallowed several foreign bodies, including nails. Vomiting and pain followed. To the left of the median line in the epigastrium, there was a lump, about the size of a duck's egg, which was firm and movable.

Operation.—Gastrostomy was performed and 192 nails, half of a screw nail, a piece of brass wire, a carpet tack, several small pieces of stick, a button and a mass of hair, matted and nearly two inches in length, were removed. The concretion of hair was withdrawn from the lower end of the esophagus from which it was projecting into the stomach.

The patient died.

Case 42 (Osler's).—Photograph and specimen are in the Royal Victoria Hospital Museum, Montreal. A personal communication (Feb. 22, 1908) from Dr. Maud C. Abbott, Curator, Royal Victoria Hospital Museum, Montreal, Canada, says the specimen "consists of two large masses of hair placed end to end and together forming a complete cast of a greatly dilated stomach. It was removed postmortem from an insane woman. The diagnosis was not made before death, though it must have formed an enormous tumor in the epigastrium."

609 Macheca Building.

ABSTRACT OF DISCUSSION

Dr. John Ruhräh, Baltimore: While hair-ball is very rare, the habit of eating hair is not uncommon. I have frequently seen cases in which children have eaten hair. In one case the patient was the child of a physician who brought me something which he thought to be some sort of a parasite. On examination I found that it was hair and the child was carefully watched and the habit broken. Two other cases that I have seen were in hospital patients who ate the hairs which they picked from the blankets.

Dr. R. B. Gilbert, Louisville: Did the hookworms found in Dr. Butterworth's case have anything to do with the pathology? Another peculiar thing about such a case is that these hairs are not carried down through the alimentary tract by the solid food taken. It seems that the child eats only a small portion of hair each day and yet the hairs remain in the stomach instead of passing through. Were any of these hairs found in the lower portion of the intestinal tract? This is the first case of hair-ball in the stomach of a human being that I have ever seen. It is certainly an interesting and rare case, and doubtless many of these cases go to autopsy without a diagnosis.

Dr. W. W. Butterworth, New Orleans: I have appended to this paper all the known cases of hair-ball reported to date. In one instance a physician found a tumor in the epigastric region, prescribed a half-ounce of castor oil every three hours, and after two or three days the hair was passed by rectum. There are other instances of similar casts being passed with the fecal matter. It is likely that picking at hairy

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50. Inman: Med. Times and Gaz., London, July 3, 1869, ii, 6.
51. Schulten: Centralb. f. Chir., 1896, xxxi, 68; Finska läk. sällsk. handl., September, 1895, xxxvii, No. 9, 1897, ii, 289.
52. Gull, Sir William: Tr. Clin. Soc., London, 1871, iv, 180.

and woolen material is common in infancy and early childhood, and undoubtedly many of these cases give rise to no symptoms. The foreign matter passes through the stomach into the intestinal tract and is carried off without further discomfort.

These concretions (hair casts) may or may not have a nucleus of some hard substance, such as a cherry stone or other fruit seed. In my case, section of the mass disclosed nothing of this sort. The tumor was limited strictly to the stomach. In a case reported by Dr. Knowsley Thornton he states that the mass extended up into the esophagus quite a distance. He facetiously remarks that if the patient had lived long enough, a diagnosis could have been made without the slightest difficulty, because the mass would have protruded from the mouth.

The occurrence in my case of uncinariasis with hair-ball made me wish to know if there were any relation between the habit of hair swallowing and the presence of intestinal parasites. It is well known that children harboring the latter have an abnormal and perverted appetite; they eat all sorts of things. It is interesting in this connection to note that in only one other case (which was reported by Quain) was the patient said to have worms. Oddly enough, these interesting and unusual conditions seem to occur in series, and I am now anxiously watching for another case of hair-ball to present itself and hope to establish a correct diagnosis antemortem and not, as happened in the present instance, postmortem.

EMANATION OF RADIUM ABSORBED AND RETAINED BY COCOANUT CHARCOAL

AN ADVANCE IN RADIUM THERAPY*

JOHN B. SHOBER, A.M., M.D.
PHILADELPHIA

About two years ago my attention was called to a letter published by Prof. E. Rutherford in *Nature*, Oct. 6, 1906, in which he points out that cocoanut charcoal has the property of absorbing and retaining for some time the emanation of radium, thorium or actinium. In this letter it is stated that cocoanut charcoal retains the emanation at ordinary temperatures, for Professor Rutherford finds that the emanation retained in charcoal in a tube open to the air loses its activity at the normal rate observed in sealed vessels. Further, he says:

> In a recent investigation I had occasion to pass the radium emanation through a tube filled with cocoanut charcoal, and was surprised to find that the emanation was completely absorbed by it. If a slow current of air, mixed with the emanation of radium, thorium, or actinium, is passed through a tube filled with charcoal, the issuing gas is completely deprived of emanation. This occurs at ordinary temperatures, and there is no necessity for initial cooling of the charcoal.

Impressed by these interesting observations of Rutherford, I at once thought that here was a certain and practical means of utilizing the emanations of radium and other radioactive salts, internally as well as externally, and a practical method of testing the therapeutic value of emanation treatment in various diseases. For a long time the medical profession has felt that the administration of radioactive solutions internally might be followed by pronounced beneficial results in certain diseases, and many efforts have been made to induce radioactivity in water, but only with partial success.

Dr. William James Morton of New York has done much work along this line and has finally decided that the best method of producing radioactive water is to immerse 50 to 100 pounds of a high-grade pitchblende in a vessel of water and has found that the measure of radioactivity of this water is about one-tenth to one-half that of metallic uranium; a very low degree of radioactivity. He dispenses this water to patients who are taking *x*-ray or radium treatment and claims to have cured in eighteen days a man suffering with a small rodent ulcer of the face by the administration of this water and small doses of bisulphate of quinin. The rate of decay of the radioactivity of water, however produced, is very rapid, falling to one-half in a few hours and no trace remaining after a few days.

Since the spring of 1906 I have been occasionally using water prepared in the same way, but can not claim to have observed any pronounced results following its administration. A recent report from the Randal-Morgan Laboratory of Physics of the University of Pennsylvania on the measure of activity of this water gives the following figures:

The water was sent to the laboratory on March 29, 1909.

March 29, activity = 0.1 of uranium disc.
March 30, activity = 0.11 of uranium disc.
March 31, activity = 0.1 of uranium disc.
April 2, activity = 0.07 of uranium disc.
April 6, activity = 0.03 of uranium disc.

It is now generally admitted that the healing and curative properties of many well-known springs is due to the radioactivity of the waters and not to the salts which they may contain. No matter how carefully reproduced artificially, they have not the same therapeutic value, and, even when the original water is shipped from the source of supply, it loses its efficacy. We now know that this is due to the fact that the radioactivity is lost in a few days.

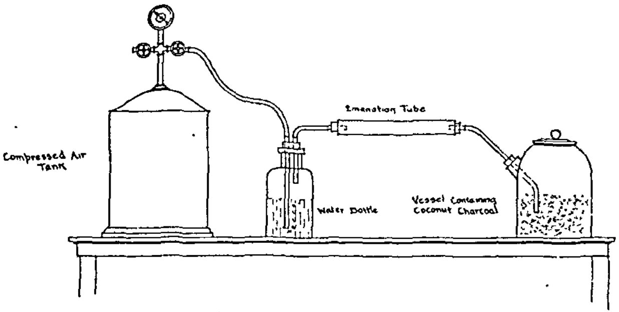

Fig. 1.—Apparatus used in original experiment.

The radioactivity of all spring waters and of radioactive water artificially produced by any method, such as that of Morton, is due to the amount of emanation the water is able to absorb. We know that water will absorb a very small amount of emanation and is able to retain it for but a short time. If, therefore, we can find any substance which can be administered internally and which will absorb and retain all the emanation from a given quantity of a radioactive salt, it seems to me that a great advance will have been made and that we shall be in a far better position than we have ever been before to observe the effect of radioactivity on metabolism and to note its therapeutic value.

Acting on the hint obtained from Rutherford's letter above referred to, on Feb. 19, 1909, I started my first experiment.

Through the courtesy of Powers-Weightman-Rosengarten Company of Philadelphia, I was supplied with a quantity of purified cocoanut charcoal. I had an emanation tube made by H. Lieber of New York. This is a celluloid tube about 8 inches long and ¾ inch in diameter, coated on the inside with a collodion solution containing 1 mgm. of strong radium bromid. Through this tube I passed a slow current of air into a porcelain vessel containing a quantity of cocoanut charcoal (Fig. 1). I found the charcoal to be strongly radioactive, discharging my electroscope more rapidly than would a specimen of high-grade pitchblende ore. I then spread a quantity of this charcoal over a key on an x-ray plate and obtained a very strong picture of the key after an exposure of four days (Fig 2). As a control I tested untreated charcoal on the electroscope and on an x-ray plate, with negative results.

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* Read before the Maine Medical Association, at the Fifty-seventh Annual Meeting, held at Portland, June 16-17, 1909.

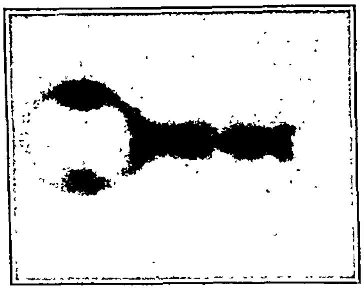

Fig. 2.—Radiograph of key obtained by exposure to radioactive charcoal for four days.

I now felt that it was important to obtain accurate and reliable measurements of the degree of radioactivity to which cocoanut charcoal could be raised and its rate of decay, and I therefore applied to Prof. Arthur W. Goodspeed of the University of Pennsylvania, at whose request Mr. D. H. Kabakjian, of the Randal-Morgan Laboratory of Physics of that university, kindly consented to undertake the work. I supplied Mr. Kabakjian with 1 gm. of 1,000 radioactive radium chlorid and requested him to place this in solution and pass a current of air through it into cocoanut charcoal and measure its radioactivity and rate of decay. I herewith submit his report.

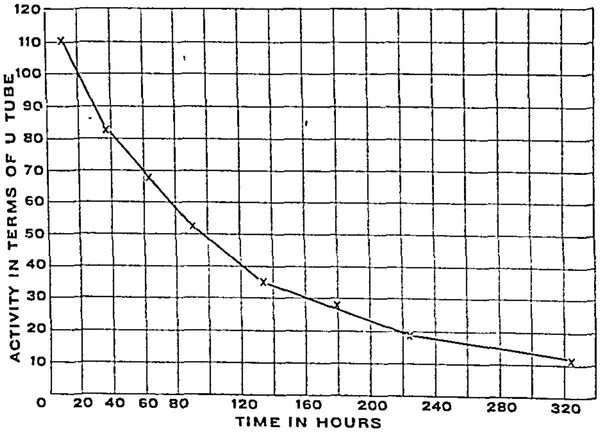

Fig. 3.—Curve showing the decay of activity of radioactive charcoal in sealed tubes.

MEASUREMENTS ON THE ACTIVITY OF COCOANUT CHARCOAL MADE ACTIVE BY ABSORBING RADIUM EMANATION

PREPARATION OF THE ACTIVE CHARCOAL

About 12 gm. of powdered charcoal were divided between two U-tubes, which were connected with each other and also with an aspirator.

One gram of radium chlorid of 1,000 activity was put in a test-tube. Through one of the holes of the two-holed stopper of this test-tube a thistle-tube was introduced which almost touched the bottom, while another glass tube made connections at the top with the U-tubes. A little water was put into the test-tube, just enough to dissolve the radium chlorid, and the aspirator was regulated so as to draw a very slow current of air through the solution (of the radium chlorid) and the U-tubes containing the charcoal. This was kept on for three hours.

The charcoal thus prepared was divided into twelve small tubes and the tubes were sealed. The tubes were opened one at a time at various intervals and their activity compared with the activity of a standard uranium oxid disc.[1] The measurements were made by means of a Dolezalek electrometer, the needle of which was kept charged to 98 to 105 volts, during different measurements, the voltage remaining constant during each particular measurement. The same difference of potential was also applied between the plates of the testing apparatus.

It was found by experiment that freshly prepared charcoal gives out emanation under ordinary conditions which, diffusing into the testing apparatus, greatly interfered with the accuracy of the measurements; for this reason the first two or three readings, often taken in less than two minutes, were regarded as more reliable.

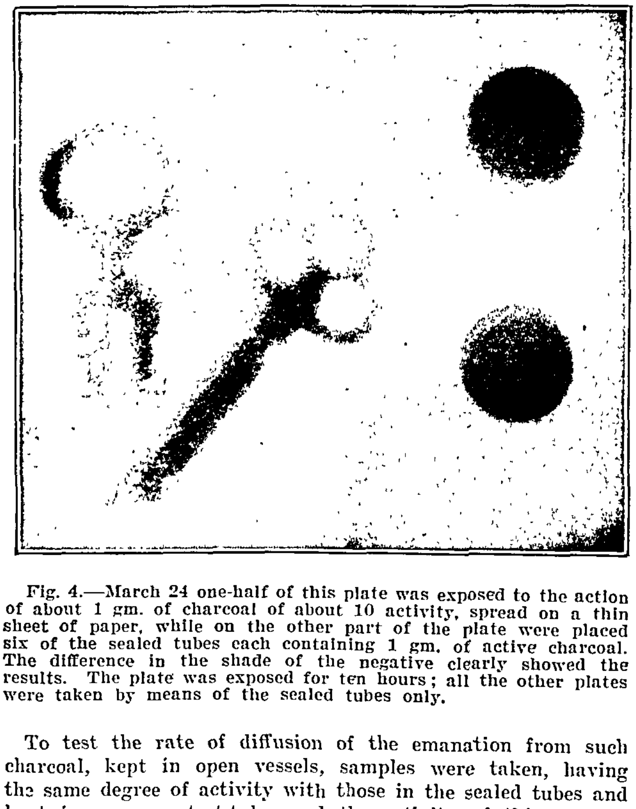

Fig. 4.—March 24 one-half of this plate was exposed to the action of about 1 gm. of charcoal of about 10 activity, spread on a thin sheet of paper, while on the other part of the plate were placed six of the sealed tubes each containing 1 gm. of active charcoal. The difference in the shade of the negative clearly showed the results. The plate was exposed for ten hours; all the other plates were taken by means of the sealed tubes only.

To test the rate of diffusion of the emanation from such charcoal, kept in open vessels, samples were taken, having the same degree of activity with those in the sealed tubes and kept in an open test-tube, and the activity of this exposed specimen was measured under similar conditions. Also one of the samples was divided into two equal parts and one part kept in a sealed tube while the other was kept in a corked test-tube. The results of these measurements are given below:

(1) Wednesday, March 24.

Charge on the needle 98 volts.

Potential difference between the plates of the testing apparatus 98 volts.

12 hours after preparation.

Uranium Disc B

Scale readings.	Time.
28	9 :11 :40
24	9 :15 :50
23	9 :16 :60

Time occupied in passing over 1 cm., t = 64 seconds.

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[1] The disc which is used as a standard of comparison in all subsequent measurements is a brass disc 6.7 cm. in diameter coated with a thin uniform layer of uranium oxid. Measurements of activity of water or of charcoal were made on similar shallow dishes or discs.

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> In a recent investigation I had occasion to pass the radium emanation through a tube filled with cocoanut charcoal, and was surprised to find that the emanation was completely absorbed by it. If a slow current of air, mixed with the emanation of radium, thorium, or actinium, is passed through a tube filled with charcoal, the issuing gas is completely deprived of emanation. This occurs at ordinary temperatures, and there is no necessity for initial cooling of the charcoal.

Impressed by these interesting observations of Rutherford, I at once thought that here was a certain and practical means of utilizing the emanations of radium and other radioactive salts, internally as well as externally, and a practical method of testing the therapeutic value of emanation treatment in various diseases. For a long time the medical profession has felt that the administration of radioactive solutions internally might be followed by pronounced beneficial results in certain diseases, and many efforts have been made to induce radioactivity in water, but only with partial success.

Dr. William James Morton of New York has done much work along this line and has finally decided that the best method of producing radioactive water is to immerse 50 to 100 pounds of a high-grade pitchblende in a vessel of water and has found that the measure of radioactivity of this water is about one-tenth to one-half that of metallic uranium; a very low degree of radioactivity. He dispenses this water to patients who are taking *x*-ray or radium treatment and claims to have cured in eighteen days a man suffering with a small rodent ulcer of the face by the administration of this water and small doses of bisulphate of quinin. The rate of decay of the radioactivity of water, however produced, is very rapid, falling to one-half in a few hours and no trace remaining after a few days.

Since the spring of 1906 I have been occasionally using water prepared in the same way, but can not claim to have observed any pronounced results following its administration. A recent report from the Randal-Morgan Laboratory of Physics of the University of Pennsylvania on the measure of activity of this water gives the following figures:

The water was sent to the laboratory on March 29, 1909.

March 29, activity = 0.1 of uranium disc.
March 30, activity = 0.11 of uranium disc.
March 31, activity = 0.1 of uranium disc.
April 2, activity = 0.07 of uranium disc.
April 6, activity = 0.03 of uranium disc.

It is now generally admitted that the healing and curative properties of many well-known springs is due to the radioactivity of the waters and not to the salts which they may contain. No matter how carefully reproduced artificially, they have not the same therapeutic value, and, even when the original water is shipped from the source of supply, it loses its efficacy. We now know that this is due to the fact that the radioactivity is lost in a few days.

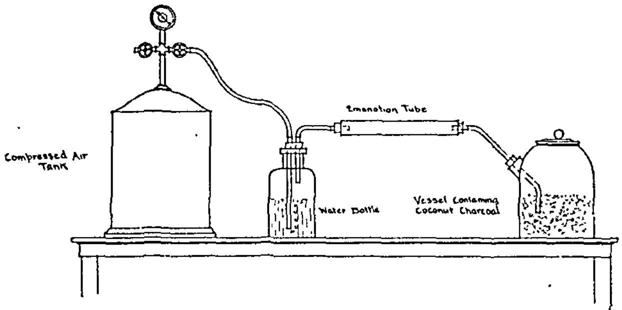

Fig. 1.—Apparatus used in original experiment.

The radioactivity of all spring waters and of radioactive water artificially produced by any method, such as that of Morton, is due to the amount of emanation the water is able to absorb. We know that water will absorb a very small amount of emanation and is able to retain it for but a short time. If, therefore, we can find any substance which can be administered internally and which will absorb and retain all the emanation from a given quantity of a radioactive salt, it seems to me that a great advance will have been made and that we shall be in a far better position than we have ever been before to observe the effect of radioactivity on metabolism and to note its therapeutic value.

Acting on the hint obtained from Rutherford's letter above referred to, on Feb. 19, 1909, I started my first experiment.

Through the courtesy of Powers-Weightman-Rosengarten Company of Philadelphia, I was supplied with a quantity of purified cocoanut charcoal. I had an emanation tube made by H. Lieber of New York. This is a celluloid tube about 8 inches long and 3/4 inch in diameter, coated on the inside with a collodion solution containing 1 mgm. of strong radium bromid. Through this tube I passed a slow current of air into a porcelain vessel containing a quantity of cocoanut charcoal (Fig. 1). I found the charcoal to be strongly radioactive, discharging my electroscope more rapidly than would a specimen of high-grade pitchblende ore. I then spread a quantity of this charcoal over a key on an x-ray plate and obtained a very strong picture of the key after an exposure of four days (Fig 2). As a control I tested untreated charcoal on the electroscope and on an x-ray plate, with negative results.

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* Read before the Maine Medical Association, at the Fifty-seventh Annual Meeting, held at Portland, June 16-17, 1909.

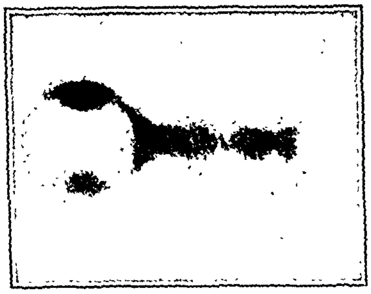

Fig. 2.—Radiograph of key obtained by exposure to radioactive charcoal for four days.

I now felt that it was important to obtain accurate and reliable measurements of the degree of radioactivity to which cocoanut charcoal could be raised and its rate of decay, and I therefore applied to Prof. Arthur W. Goodspeed of the University of Pennsylvania, at whose request Mr. D. H. Kabakjian, of the Randal-Morgan Laboratory of Physics of that university, kindly consented to undertake the work. I supplied Mr. Kabakjian with 1 gm. of 1,000 radioactive radium chlorid and requested him to place this in solution and pass a current of air through it into cocoanut charcoal and measure its radioactivity and rate of decay. I herewith submit his report.

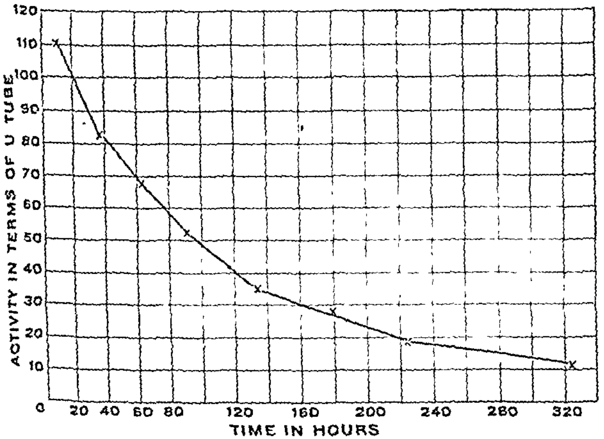

Fig. 3.—Curve showing the decay of activity of radioactive charcoal in sealed tubes.

MEASUREMENTS ON THE ACTIVITY OF COCOANUT CHARCOAL MADE ACTIVE BY ABSORBING RADIUM EMANATION

PREPARATION OF THE ACTIVE CHARCOAL

About 12 gm. of powdered charcoal were divided between two U-tubes, which were connected with each other and also with an aspirator.

One gram of radium chlorid of 1,000 activity was put in a test-tube. Through one of the holes of the two-holed stopper of this test-tube a thistle-tube was introduced which almost touched the bottom, while another glass tube made connections at the top with the U-tubes. A little water was put into the test-tube, just enough to dissolve the radium chlorid, and the aspirator was regulated so as to draw a very slow current of air through the solution (of the radium chlorid) and the U-tubes containing the charcoal. This was kept on for three hours.

The charcoal thus prepared was divided into twelve small tubes and the tubes were sealed. The tubes were opened one at a time at various intervals and their activity compared with the activity of a standard uranium oxid disc.[1] The measurements were made by means of a Dolezalek electrometer, the needle of which was kept charged to 98 to 105 volts, during different measurements, the voltage remaining constant during each particular measurement. The same difference of potential was also applied between the plates of the testing apparatus.

It was found by experiment that freshly prepared charcoal gives out emanation under ordinary conditions which, diffusing into the testing apparatus, greatly interfered with the accuracy of the measurements; for this reason the first two or three readings, often taken in less than two minutes, were regarded as more reliable.

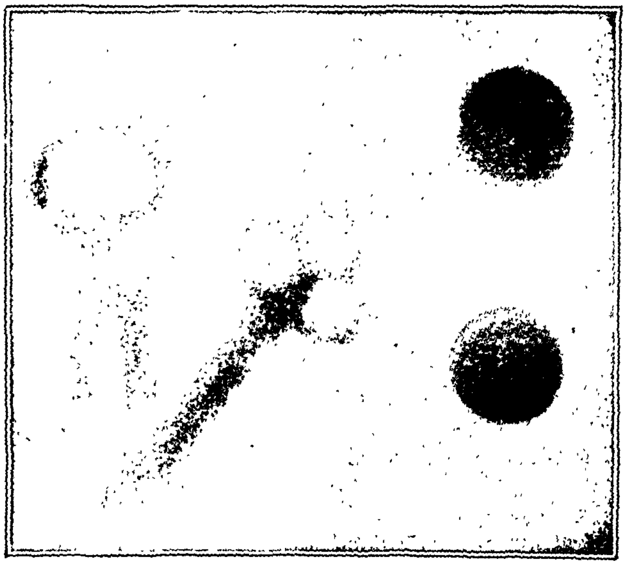

Fig. 4.—March 24 one-half of this plate was exposed to the action of about 1 gm of charcoal of about 10 activity, spread on a thin sheet of paper, while on the other part of the plate were placed six of the sealed tubes each containing 1 gm. of active charcoal. The difference in the shade of the negative clearly showed the results. The plate was exposed for ten hours; all the other plates were taken by means of the sealed tubes only.

To test the rate of diffusion of the emanation from such charcoal, kept in open vessels, samples were taken, having the same degree of activity with those in the sealed tubes and kept in an open test-tube, and the activity of this exposed specimen was measured under similar conditions. Also one of the samples was divided into two equal parts and one part kept in a sealed tube while the other was kept in a corked test-tube. The results of these measurements are given below:

(1) Wednesday, March 24.
Charge on the needle 98 volts.
Potential difference between the plates of the testing apparatus 98 volts.
12 hours after preparation.

URANIUM DISC B

Scale readings.	Time.
28	9:11:40
24	9:15:50
23	9:16:60

Time occupied in passing over 1 cm., t = 64 seconds.

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[1] The disc which is used as a standard of comparison in all subsequent measurements is a brass disc 6.7 cm. in diameter coated with a thin uniform layer of uranium oxid. Measurements of activity of water or of charcoal were made on similar shallow dishes or discs.

ACTIVE CHARCOAL TUBE 1

Scale readings.	Time.
29 - 10	10 seconds

Observed number of deflections in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	10	10/19
19	12	12/19
19	12	12/19
19	10	10/19
19	11	11/19

Average time of 1 cm. deflection 11/19 second.
Activity compared with that of uranium disc
A=19/11 x 64=110

(2) Thursday, March 25, 8:45 a. m.
Uranium disc B. period of 1 cm. deflection, t = 71 seconds.

CHARCOAL TUBE 3

Total observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	16	16/19
19	16	16/19
19	15	15/19

Activity=19/16. x 71=84
A = 84

(3) Friday, March 26, 8:45 a. m.
U. disc, time of 1 cm. deflection, t = 65.

CHARCOAL TUBE 4

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	19	1 second.
19	18	18/19 second.
19	16	16/19 second.

Average 18/19. Activity = 19/18 x 65 = 69. A = 69.

(4) Saturday, March 27, 10 a. m.
U. disc, time of 1 cm. deflection, t=63.

CHARCOAL TUBE 5

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
19	24	24/19
19	23	23/19
19	23	23/19
19	24	24/19
	Average	23.5/19

Activity=19/23.5 x 63=51
A = 51

(5) Monday, March 29, 9:30 a. m.
U. disc, time of 1 cm. deflection, t = 60 seconds.

CHARCOAL TUBE 6

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
20	34	17/10
10	17	17/10
20	35	17.5/10
10	17	17/10
	Average	17/10

Activity = 10/17 x 60 = 35.3
A = 35.3

(6) Wednesday, March 31, 8:30 a. m.
U. disc time of 1 cm. deflection. t = 54 seconds.

CHARCOAL TUBE 7

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection in seconds.
20	36	1.8
20	37	1.85
10	18	1.8
20	39	1.95
	Average	1.85

Activity = 10/18.5 x 54 = 29
A = 29

(7) Friday, April 2, 8 a. m.
U. disc, time of 1 cm. deflection, t = 60 seconds.

CHARCOAL TUBE 8

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection.
5	15	3
10	30	3
15	45	3
5	15	3
10	30	3

Activity = 1/3 x 60 = 20
A = 20

(8) Tuesday, April 6, 9 a. m.
U. disc, time of 1 cm, deflection, t = 66 seconds.

CHARCOAL TUBE 9

Observed deflection in cm.	Total time in seconds.	Time of 1 cm. deflection in seconds.
5	30	6
10	60	6
15	85	5.7
20	120	6

Activity = 1/6 x 66 = 11
A = 11

ACTIVITY OF THE CHARCOAL IN THE OPEN TEST-TUBE IN TERMS OF U. DISC STANDARD

Specimen having an activity of 110, of U. disc.

24 hours after exposure, Activity = 11
48 hours after exposure, Activity = 7.8
72 hours after exposure, Activity = 6.6
7 days after exposure, Activity = 6.6
9 days after exposure, Activity = .9
13 days after exposure, Activity = .4

We see from the figures given that charcoal powder made radioactive by absorbing radium emanation when kept in sealed glass tubes loses its activity slowly, owing to the decay of the emanation absorbed. On examining the curve of decay of activity of such charcoal it is seen that the shape of the curve is not unlike that of the decay curve of the emanation itself. The fact that it reaches the half value in less than four days may probably be explained by supposing that the charcoal so enclosed (probably) gives out some of the emanation absorbed, which diffuses into the glass tube, thereby diminishing its activity. The figures given above show that if the charcoal is kept in an open test-tube instead of sealed tubes, the loss of activity is very rapid and falls to about one-tenth of its original value in twenty-four hours, if the powder is well exposed, (*i. e.*, when the depth of a layer of powder is not greater than the exposed surface).

In thirteen days the activity has fallen to about 2.36 per cent. of its original activity.

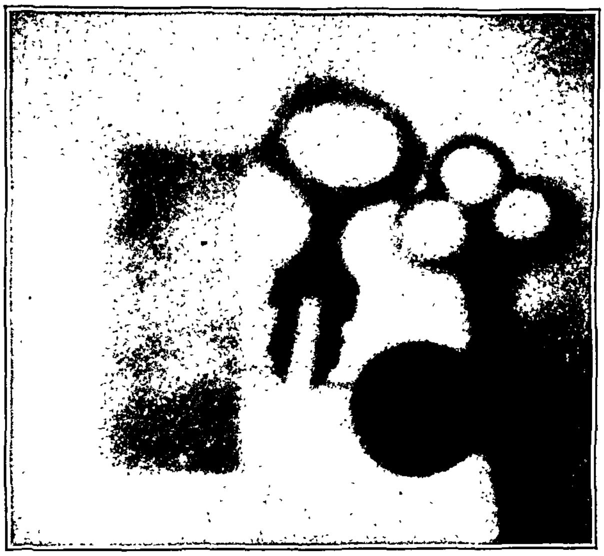

Fig. 5.—March 27. Objects exposed from 10 a. m. to 10 p. m. Exposure twelve hours.

One gram of charcoal of about 100 activity was divided into two equal parts and one was kept in a small corked test-tube while the other was in a sealed tube. Their activity was measured after fifteen days and the part in the sealed tube was found to be four times as active as that in the corked tube.

Several photographic tests were made to measure the activity and rate of decay of these sealed tubes, and of the charcoal itself. The results are seen in the illustrations, Figures 4 to 6. The objects seen on the negatives are one brass and one steel key, one cent piece and a piece of plate glass about 2 mm. in thickness.

Attention is called to the fact that the charcoal in the sealed tubes is radioactive at the end of sixteen days.

It will be seen from this report that by a very simple method and by the use of weak radium, cocoanut charcoal can be raised to a very high grade of radioactivity. Whereas water can be raised to only a fraction of the radioactivity of uranium oxid, which at the present time is taken as the unit of radioactivity, cocoanut charcoal, according to this report, can be raised to 110 times the radioactivity of uranium oxid. And, whereas water loses its radioactivity entirely in a few days, cocoanut charcoal retains a radioactivity above ten times that of uranium oxid for more than thirteen days. Subsequent experiments have shown that we can raise the charcoal to 160 times the radioactivity of uranium oxid.

In connection with this report it may be of interest to quote from an article[2] on "The Absorption of Radioactive Emanations by Charcoal," by R. W. Boyle, communicated by Prof. E. Rutherford:

> The experiments of Sir James Dewar in 1903 drew attention to the property possessed by the charcoal of cocoanut of absorbing gases in a remarkable degree. Since then this property has been investigated by several experimenters[3] and has been applied by Sir William Ramsay in separating the inert gases helium and neon from the air, and measuring the quantities in which they exist in the atmosphere. The results in the papers mentioned below may be summarized as follows:
>
> 1. The absorption of gases by cocoanut charcoal is greatly increased by lowering the temperature of the charcoal.
> 2. The charcoal has a greater affinity for some gases than for others, there being something of the nature of a selection absorption.
> 3. In consequence of this property, it is possible to separate from one another, in some degree, the constituents of a mixed gas. Of the inert gases of the argon family, argon is absorbed in about the same degree as ordinary gases, but helium and neon in a much less degree, and helium less than neon.
> 4. The absorption is also influenced by the pressure of the gas in contact with the charcoal, the pressure concentration curves varying in a regular manner with the temperature.

Fig. 6.—April 9. Objects exposed twenty hours.

Boyle then refers to Rutherford's letter to *Nature* above mentioned and states that he pointed out that this property of cocoanut charcoal also holds for the radioactive emanations. Experimenting with radium and thorium emanation, Boyle found that in the case of charcoal in granulated form the amount of absorption depends on (a) the nature of the charcoal, (b) the speed of the air-current through the absorbent, (c) the amount of charcoal surface exposed to the emanation, and (d) the temperature of the charcoal.

He concludes by stating that the percentage of absorption of thorium emanation by means of charcoal (1) depends on the nature of the charcoal used, being greatest for cocoanut charcoal, intermediate for animal, and least for wood charcoal; (2) is decreased by increasing the velocity of the gas-current which conducts the emanation through the charcoal; (3) is increased by increasing the charcoal absorbing surface, and (4) is dependent on the temperature, following the law of ordinary gases, viz., that a lowering of the temperature of the charcoal causes an increase and a raising of the temperature a decrease in the amount of absorption.

It takes about two or three hours to exhaust all the emanations from 1 gm. of 1,000 radioactive radium.[4] Before the radium can be utilized again the solution must be evaporated to dryness and the radium must be allowed to rest for about ten or fourteen days before it has recovered itself sufficiently to give off its full quota of emanation. The amount of charcoal which can be charged at any one time has not been accurately determined, but it will probably depend on the degree of radioactivity desired. I have been able to obtain on one charge sufficient charcoal of 140 activity to fill five small test-tubes, each containing enough to supply a patient for fourteen days, the dose being about as much as would cover a dime, taken three times a day. The tubes are stoppered with rubber corks and kept in a cool place, and the patients are instructed to replace the cork immediately after each dose. A fresh tube should be supplied about every ten days or two weeks. We have not found it necessary to prepare the charcoal either by cooling or heating. The current of air which carries the emanation into the charcoal is passed very slowly and in order that the gas may pass over as large a surface of the charcoal as possible it is placed in a glass tube eighteen inches long having a diameter of half an inch. After this tube is charged the charcoal is quickly transferred to small test-tubes, which are stoppered immediately with rubber corks. The charcoal in these tubes has an initial radioactivity of 120 to 160 times that of the uranium disc and remains strongly radioactive for two weeks.

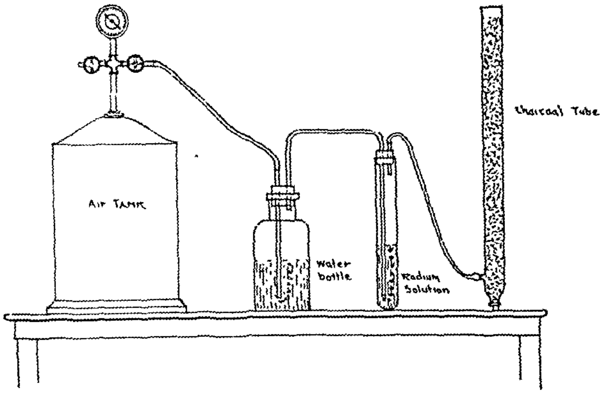

Fig. 7.—Author's method of charging cocoanut charcoal with radium emanation

I therefore feel that I have developed a very easy and simple method of utilizing radioactive emanations internally as well as externally, for there is no reason why the charcoal should not be incorporated in ointments or gelatin or other solutions and applied in cases of leg ulcer, lupus, eczemas and other cutaneous lesions. The effect of the internal administration of such charcoal on metabolism and its value as a therapeutic agent in many diseases will require careful study and accurate observations in many carefully selected cases before any definite conclusions can be drawn.

The *Archives of the Roentgen Ray* for January, 1909, contains an abstract of a paper[5] by Dr. F. Nagelschmidt, of the Finsenklinik, Berlin, on the "Therapeutic Action of Radium Emanation." Mention is made of previous work by Lowenthal and by Laqueur. Lowenthal administered preparations containing radium emanations, which he found useful in articular rheumatism and chronic neuritis, while Laqueur worked with tablets containing an emanation salt, and it is stated that neither of them observed any ill effects apart from the ordinary reaction. The reaction referred to is probably the erythema which might follow the local application of the preparations. The quantity of radium emanation in Laqueur's emanosal tablets is said to be very small. The internal therapeutic dose is from 10,000 to 20,000 emanation units per diem, gradually increasing. For the bath 100,000 to 200,000 emanation units are given, the patient remaining in the water for half an hour. If reaction sets in the treatment must be intermitted.

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[2] Boyle, R. W.: Phil. Mag., March, 1909.

[3] Dewar: The Absorption and Therman Evolution of Gases Occluded in Charcoal of Low Temperature, Proc. Roy. Soc., lxxiv, 122; The Separation of the Most Volatile Gases from Air without Liquefaction, ibid., lxxiv, 122. Ramsay: The Determination of the Amount of Neon and Helium in Atmospheric Air, Proc. Roy. Soc., May 24, 1905. Travers: The Law of Distribution in the Case in which one of the Phases possesses Mechanical Rigidity, Absorption and Occlusion, Proc. Roy. Soc., July 21, 1905.

[4] The time for exhausting all the emanation stored in radium depends on the velocity of air-current and probably is much less than three hours.

[5] Nagelschmidt, F.: Berl. klin Wchnschr., March 16, 1908.

Nagelschmidt's preparation appears to be entirely different. An insoluble salt of radium is enclosed in a parchment capsule and placed in water, which, he asserts, is thus kept charged with the radium emanation. He uses this water internally and externally by compresses and baths. It is stated in the abstract that, like Lowenthal, he has had satisfactory results in cases of muscular and articular rheumatism, in neuritis, in ozena and in catarrh. He did not observe the bath reaction in articular rheumatism. His doses began with 2,000 units and were increased to 10,000. He believes that the emanation treatment may be counter-indicated in certain cases, and cites a case of latent ulcer of the stomach, in which profuse hematemesis came on after eight doses of the emanation. This observation may be taken in connection with the fact that wounds of patients taking the Gastein waters, which are markedly radioactive, heal with difficulty. Contrary to Lowenthal's observations, the presence of emanation was not found in the urine and feces of his patients. It is asserted that this treatment is indicated in diseases of the respiratory organs, in arteriosclerosis, in rheumatic, subacute and chronic diseases of the joints or nerve sheaths, the mucous membrane or the muscles, such as are treated at Wiesbaden or Baden-Baden, and that ozena, from whatever cause, is amenable to the emanation without any further treatment.

The class of cases in which I am inclined to test the value of this agent is that of chronic diseases which do not yield to our present methods of treatment, such as chronic gastritis or duodenal or intestinal ulcers, tuberculous ulceration of the intestine, various forms of functional diseases of the stomach or intestine, carcinoma of the stomach or esophagus, chronic muscular or articular rheumatism, neuritis, arteriosclerosis, certain general skin diseases, such as psoriasis and the eczemas, all forms of tuberculosis and in general debility after wasting diseases, in which the agent may be used as a tonic.

In addition to this, since the same rays are given off from the emanation as are obtained from radium itself we may find that the same therapeutic effects follow the local application of celluloid tubes filled with cocoanut charcoal in which the emanation is captured, as follow the local application of a tube or capsule containing radium. The potency of such a tube will, of course, diminish from day to day, but with improved methods will last long enough to allow of several treatments in a given case, when a new tube can be obtained from the source of supply.

In conclusion I beg to submit the following observations for the consideration of the medical profession:

1. Cocoanut charcoal is an inert substance and can be administered freely internally.
2. Cocoanut charcoal will absorb and retain the emanation of radium and, when treated by my method, can be raised to a very high degree of radioactivity compared to water—namely, from 200 to 300 times the radioactivity of the most radioactive water.
3. It can be prepared with but small expense. The same radium can be used over and over again indefinitely; none of the radium need be lost.
4. The charcoal will retain its radioactivity for at least two weeks and the method of administration is simple.
5. The beneficial effects of radioactive spring waters in many diseases and the results obtained abroad by the administration of weak emanation preparations warrants the belief that in this highly radioactive charcoal we have an agent the use of which will be followed by the same if not better results.
6. The local application of emanation cocoanut charcoal in tubes or capsules or incorporated in ointments or solutions is worthy of trial.

1731 Pine street.

Clinical Notes

ASEPTIC MITTENS

FRANKLIN BRADY, M.D.
Surgeon to Roosevelt Hospital
PHILADELPHIA

After scrubbing the hands and arms, preparatory to operative or obstetric work, it is important to keep them clean. Frequently, I have seen an operator or his assistant, or both, clean the hands and arms thoroughly, then, while waiting for the patient to be anesthetized, walk around the room with their hands by their sides, brushed by a passing nurse's apron or a physician's coat.

To overcome this difficulty, I introduced into my operating room, fifteen years ago, what I call "mittens," which are nothing more than bags of double thickness. These mittens are made of canton flannel and are in two sizes, short and long. When finished the short ones measure about 6 by 13 inches, the long ones 6 by 19 inches.

View showing the way the aseptic mittens protect the hands after sterilization.

They are made as follows: For the short mittens, cut two pieces, 14 by 14 inches, and fold them in the center so as to leave the fleecy sides out. Stitch across the end and up one side; this will make two bags 7 by 14 inches.

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[6] The Journal A. M. A., Dec. 19, 1908, p. 2173.

One bag should now be turned fleecy side in and the other bag inserted into it, so that the fleecy sides are in contact. The raw edges are now turned in and the two bags stitched together, giving a bag of double thickness. To make the long mittens, two pieces 14 by 20 inches are cut and folded in the long axis and stitched as described above. The sizes I have given are those I find most convenient.

With a little practice one can, without soiling the hands, do a great deal with the mittens on: unpin packages of dressings, move tables or chairs; if necessary, assist in arranging the patient, etc. Care must be taken not to get the mittens damp, because the dampness, passing through the mitten, will carry microorganisms through to the hands.

The reason for making them of canton flannel is that it is thick, and dirt will not pass through as quickly as it would if made of muslin or other thin material. They are made of double thickness so that if by any means a little dirt should pass through the one thickness you are guarded by the second.

The short mittens are worn when it is important to have only the hands and the lower parts of the arms clean. It is always important to clean the arms above where the top of the mitten comes; otherwise the top edge would become soiled and in slipping it off and on would soil the hands. When ready to remove the mittens let them slide off the hands in such a way that if it is necessary to use them again they need not be picked up, but the hands simply thrust into them. Care should be taken to put them where the ends will not be brushed by those passing; otherwise the ends become soiled and soil the hands and arms as they are put on.

My method of sterilizing the mittens is the same as that employed in sterilizing towels. The short mittens are not folded, the long ones are folded once, they are wrapped in double thickness of unbleached muslin or cotton toweling and pinned, having a tag marked "short mittens" or "long mittens" as the case may be.

PROTEIN FEVER: THE PRODUCTION OF A CONTINUED FEVER BY REPEATED INJECTIONS OF PROTEIN

A PRELIMINARY NOTE

VICTOR C. VAUGHAN, M.D.
SYBIL MAY WHEELER, PH.D.
AND
WILLIAM F. GIDLEY, B.S.
ANN ARBOR, MICH.

The purpose of this paper is to make a short preliminary report on some experiments in which we are now engaged The work done in the hygienic laboratory of the University of Michigan during the past ten years in the study of the cleavage products of proteins, bacterial, vegetable and animal, has, in our opinion, given us quite a new point of view from which to study the infectious diseases. We have shown that all the true proteins which we have investigated, now more than thirty in kind and from diverse sources, may be split up into poisonous and non-poisonous proteins or into toxophors and haptophors. The toxophor group seems to be the same so far as its effects on animals are concerned, whatever the protein from which it is derived. Egg-white contains the same poison, physiologically at least, as that found in the typhoid bacillus, and if egg-white could grow and multiply in the animal body it would, as a result of such growth and subsequent cleavage, be just as deadly as the bacilli of the infectious disease. When a man drinks water containing typhoid bacilli and proves susceptible he does not immediately manifest symptoms of this disease. There is a period of incubation, which in typhoid fever is about ten days. During this time the bacilli are multiplying in the man's body in great numbers and still the man has no warning of their presence. Instead he often feels quite well during this period of incubation. We must, therefore, conclude that it is not the growth and multiplication of the bacilli directly that cause the disease. While growing and multiplying in the body the typhoid bacilli are converting the proteins of the man into bacterial proteins. They are converting normal and native proteins into abnormal and foreign proteins, and this process continues for about ten days before the man feels ill or the first symptoms of the disease develop. What new factor is it, then, that appears, closes the period of incubation and ushers in the disease? This new factor is the sensitization of the body to the foreign protein which has been introduced from without in the form of a few bacilli which have grown and multiplied by feeding on the proteins of the man's body. This sensitization consists in the development in certain cells, most probably connective tissue cells, of a specific proteolytic ferment which splits up the foreign proteins, existing as bacterial cells. It is a belated attempt on the part of the body to destroy the invader. The period of incubation is measured by the time necessary to develop this ferment, and it varies with the nature of the foreign protein and the species of animal invaded. We can not induce a continued fever in rabbits and guinea-pigs by inoculating them with the typhoid bacillus, because this protein sensitizes these animals within a few hours instead of a few days, and within a short time the animal is either dead or well. This is a condition like unto that which renders man immune to many bacteria. His cells are soon sensitized, and the invading organism is killed before it has time to multiply and store up enough poison to kill him. We have shown that it is the non-poisonous portion of the protein molecule or its haptophor that sensitizes the animal or leads to the development of the specific ferment. This is a brief statement of the conclusions which we have reached from our studies of the proteins and their cleavage products and their relation to the infectious diseases. We are quite aware of the fact that our views have not met general acceptance, and consequently we are glad to present herewith what we believe to be a marked confirmation of our teachings.

It occurred to us that if the above given ideas be correct we should be able to induce in animals a continued fever by repeated subcutaneous injections of a soluble foreign protein. We have done this with bacterial proteins, but, since vitalistic dogmas cling so closely, we intend to present herewith an illustration of the results that we have obtained by repeated subcutaneous injections of egg-white dilutions in rabbits. The whites of fresh eggs have been diluted with an equal volume of 0.5 per cent. phenol solution.

Table 1 is self-explanatory, and the record is strikingly similar to one for typhoid fever. We have here a condition practically identical with an infectious fever and yet without any infection. Fever results when any foreign protein finds its way into the blood and the body becomes sensitized to it and begins to split it up. The foreign protein may be from the animal's own body. The subcutaneous injection of solutions of silver nitrate or other destructive chemical agents causes fever by de-

TABLE 1.—RABBIT RECEIVING 1:1 EGG ALBUMIN (NOT FILTERED) SUBCUTANEOUSLY EVERY 2 HOURS IN AMOUNT INDICATED BELOW. URINE COLLECTED AND WEIGHT TAKEN AT 1 P. M. URINE FILTERED THROUGH PAPER

1909 Date.	Weight.	Amt. Urine.	Sp. Gr. with Picnometer.	% Ash.	% N.	Temperatures.								Remarks.
						7	9	11	1	3	5	7	9	
5/20	....	...	......	....	....	.....	.....	.....	102.5	.....	102.2	.....	.....	Normal Temperature.
5/21	....	...	......	....	....	.....	102.1	.....	102.0	.....	102.3	.....	.....	Normal Temperature.
5/22	....	...	......	....	....	.....	101.9	.....	102.3	.....	102.5	.....	.....	Normal Temperature.
5/23	....	...	......	....	....	.....	102.0	.....	102.4	.....	.....	.....	.....	Normal Temperature.
5/24	....	...	......	....	....	.....	101.8	.....	102.0	.....	101.8	.....	.....	Normal Temperature.
5/25	....	...	......	....	....	.....	102.1	.....	102.2	.....	102.2	.....	.....	Normal Temperature.
5/26	2525	...	......	....	....	.....	102.1	102.3	102.3	102.3	102.1	101.8	101.7	Normal Temperature.
5/27	2450	260	1.0106	1.61	.16	101.4	101.6	102.4	2 c.c. 101.8	2 c.c. 101.7	2 c.c. 101.3	2 c.c. 101.4	2 c.c. 101.9	
5/28	2440	125	1.0124	2.12	.15	2 c.c. 101.1	2 c.c. 101.2	2 c.c. 101.5	2 c.c. 102.5	2 c.c.	2 c.c. 102.2	2 c.c. 103.2	2 c.c. 102.6	
5/29	2380	54	......	....	.16?	2 c.c. 102.7	2 c.c. 102.6	2 c.c. 102.4	2 c.c. 103.6	2 c.c. 103.9	2 c.c. 104.2	2 c.c. 104.0	2 c.c. 103.4	
5/30	2330	275	1.0110	1.73	.19	.....	2 c.c. 103.0	2 c.c. 103.5	2 c.c. 104.0	2 c.c. 104.0	2 c.c. 103.8	2 c.c. 103.8	2 c.c. 103.2	
5/31	2270	266	1.0130	2.41	.23	2 c.c. 103.2	2 c.c. 103.8	2 c.c. 103.5	2 c.c. 104.0	2 c.c. 103.7	2 c.c. 103.4	2 c.c. 103.3	2 c.c. 103.0	
6/1	2355	104	1.0294	3.75	.53	2 c.c. 103.0	2 c.c. 103.3	2 c.c. 103.4	2 c.c. 103.2	4 c.c. 103.8	4 c.c. 103.9	4 c.c. 104.0	4 c.c. 105.2	Forty doses of 2 c.c. each.
6/2	2335	370	1.0114	1.89	.16	4 c.c. 103.8	4 c.c. 103.6	4 c.c. 103.2	4 c.c. 106.2	4 c.c. 106.0	4 c.c. 104.0	4 c.c. 104.1	4 c.c. 105.0	Much albumin present in urine as shown by heat and HNO_3.
6/3	2320	290	1.0093	1.26	.30	4 c.c. 103.4	4 c.c. 103.2	4 c.c. 103.0	4 c.c. 103.0	4 c.c. 103.6	4 c.c. 103.2	4 c.c. 103.5	4 c.c. 103.6	Twenty doses of 4 c.c. each.
6/4	2290	155	1.0101	1.55	.28	8 c.c. 103.1	8 c.c. 103.2	8 c.c. 103.2	8 c.c. 103.6	8 c.c. 103.6	8 c.c. 103.6	8 c.c. 103.6	8 c.c. 104.3	Much albumin in urine.
6/5	2290	225	1.0129	1.20	.42	8 c.c. 105.4	8 c.c. 105.7	8 c.c. 105.5	8 c.c. 106.0	8 c.c. 106.0	8 c.c. 105.6	8 c.c. 106.1	8 c.c. 106.4	Much albumin in urine.
6/6	2250	95	1.0148	1.71	.56	.....	8 c.c. 105.6	.....	8 c.c. 106.0	.....	8 c.c. 105.9	8 c.c. 105.6	8 c.c. 105.3	Much albumin in urine.
6/7	2320	100	1.0165	2.00	.66	8 c.c. 105.2	8 c.c. 104.7	8 c.c. 104.0	8 c.c. 104.7	8 c.c. 105.4	8 c.c. 105.6	8 c.c. 105.2	8 c.c. 105.2	Much albumin in urine. Casts, mucin, phosphates and carbonates in heavy ppt.
6/8	2350	52	1.0267	2.02	2.53	8 c.c. 105.5	8 c.c. 105.4	8 c.c. 104.9	8 c.c. 105.2	8 c.c. 104.9	8 c.c. 105.3	8 c.c. 104.9	8 c.c. 104.9	Much albumin in urine.
6/9	2355	115	1.0134	1.56	1.00	8 c.c. 105.3	8 c.c. 105.2	8 c.c. 105.1	8 c.c. 105.1	8 c.c. 106.0	8 c.c. 105.4	8 c.c. 105.8	8 c.c. 105.8	Much albumin in urine.
6/10	2345	155	1.0106	1.66	.56	8 c.c. 105.4	8 c.c. 104.8	8 c.c. 104.8	8 c.c. 104.8	8 c.c. 104.8	8 c.c. 104.9	.....	8 c.c. 105.3	Much albumin in urine.
6/11	2230	165	1.0100	1.64	.60	8 c.c. 105.2	8 c.c. 104.8	8 c.c. 105.2	8 c.c. 105.7	8 c.c. 105.8	8 c.c. 105.7	8 c.c. 105.8	8 c.c. 105.8	Much albumin in urine.
6/12	2330	95	1.0170	1.56	.92	8 c.c. 105.3	8 c.c. 105.0	8 c.c. 104.8	8 c.c. 105.6	8 c.c. 106.0	8 c.c. 106.0	8 c.c. 105.8	.....	Albumin in urine.
6/13	2280	190	1.0140	1.81	.54	.....	8 c.c. 104.8	.....	8 c.c. 105.0	8 c.c. 104.9	.....	8 c.c. 104.7	.....	Albumin in urine.
6/14	2250	115	1.0148	1.15	.98	8 c.c. 104.5	8 c.c. 104.7	8 c.c. 104.7	8 c.c. 104.7	8 c.c. 104.9	8 c.c. 105.4	8 c.c. 105.6	8 c.c. 105.4	Albumin in urine.
6/15	2180	140	1.0179	2.60	.65	8 c.c. 105.6	8 c.c. 105.5	Doses Stopped. 105.1	105.4	105.3	105.2	105.2	105.2	Eighty-two doses of 8 c.c. each. 816 c.c. given in all.
6/16	2135	155	1.0194	2.99	.66	104.2	104.8	104.1	104.1	104.0	104.0	103.9	104.1	Albumin in urine.
6/17	2080	170	1.0139	2.76	.50	104.2	104.6	104.1	103.6	103.9	103.4	103.4	103.2	Albumin in urine.
6/18	2040	205	1.0184	2.10	.43	103.0	103.0	103.2	103.4	104.1	103.6	103.8	103.5	Albumin in urine.
6/19	1960	150	1.0198	2.80	.64	103.3	103.0	103.7	103.0	103.0	103.4	103.1	102.8	Albumin in urine.
6/20	1880	22	......	....	2.90	.....	102.8	.....	102.9	.....	103.0	102.7	.....	Albumin in urine.
6/21	1850	10	......	....	....	102.6	102.6	102.5	102.3	102.2	102.0	101.8	101.8	Albumin in urine.
6/22	1885	55	......	....	....	.....	102.4	.....	102.8	.....	101.5	.....	.....	Albumin in urine.
6/23	1900	...	......	....	....	.....	101.5	.....	.....	.....	101.5	.....	.....	Albumin growing less.
6/24	1980	...	......	....	....	.....	101.6	.....	.....	.....	101.5	.....	.....	Only a trace.
6/25	2070	...	......	....	....	.....	101.5	.....	.....	.....	101.6	.....	.....	Only a trace.
6/26	2120	...	......	....	....	.....	101.5	.....	.....	.....	101.5	.....	.....	No albumin.

TABLE 2.—RABBIT RECEIVES 200 MG. TYPHOID POISON (FILTERED, BUT UNNEUTRALIZED), SUBCUTANEOUSLY, AS SHOWN BELOW. WEIGHT AND URINE TAKEN IN MORNINGS

1909 Date.	Weight.	Amt. Urine.	Sp. Gr. with Pic.	% Ash.	% N.	Temperatures.								Remarks.
						9	11	1	3	5	7	9	10	
4/26	2820	...	......	....	....	.....	103.4	102.7	102.8	102.8	103.1	103.0	.....	
						200 mg. Slight diarrhea throughout afternoon.	200 mg.	200 mg.	200 mg.	200 mg.	200 mg.	200 mg.	200 mg.	
4/27	2805	*325	1.0084	1.23	.22	102.8	102.7	102.4	102.2	102.9	103.2	103.9	.....	
4/28	2550	160	1.0092	1.38	.37	200 mg. 105.5	200 mg. 104.6	200 mg. 104.6	200 mg. 104.6	200 mg. 104.5	200 mg. 105.5	200 mg. 105.5	200 mg. 105.8	
4/29	2550	35	1.0263	3.12	2.20	200 mg.† 105.5	.....	.....	.....	.....	.....	.....	.....	

* Normal amount of urine for 21 hours.
† Died within a minute after this dose.

TABLE 3.—RABBIT RECEIVES 200 MG. TYPHOID POISON (FILTERED, BUT UNNEUTRALIZED) SUBCUTANEOUSLY, AS SHOWN BELOW. WEIGHT AND URINE TAKEN IN MORNINGS

1909. Date.	Amt. Urine.	Sp. Gr. with Pic.	% Ash.	% N.	Temperatures.							Weight.	Remarks.
					9	11	1	3	5	7	9		
4/21	...	......	....	....	.....	.....	.....	102.2	102.2	.....	.....	....	Normal temperature at 7 and 9.
4/22	*125	1.0105	1.60	.30	200 mg. 102.0	200 mg. 100.9	200 mg. 101.3	200 mg. 102.8	200 mg. 103.5	200 mg. 104.4	200 mg. 103.1	2440	
4/23	255	1.0044	.61	.18	200 mg. 105.8	200 mg. 105.4	200 mg. 105.0	200 mg. 104.2	200 mg. 103.4	200 mg. 103.2	200 mg. 103.2	2255	
4/24	60	1.0089	1.04	.55	200 mg. 103.2	200 mg. 103.8	200 mg. 104.0	200 mg. 103.6	200 mg. 101.5	200 mg. 98.4	200 mg. §	2080	Total amount of toxin given, 4 gm.
4/25	†15(?)	1.0112	.70	1.22	.....	.....	.....	.....	.....	.....	.....	....	

* Normal amount of urine for 16 hours.
† Normal amount of urine for 10 hours.
§ Died at 7:05.

stroying the tissue with which it comes in contact. An injury that crushes and destroys tissue without breaking the skin or being accompanied by bacterial infection causes fever because the broken-down tissue is absorbed into the circulation. Fever, more or less marked, accompanies perfectly aseptic operations in which tissue is destroyed and left in the body. In the intermittent fevers the elevation of temperature is simultaneous with or immediately subsequent to the discharge of protein into the blood. In the infectious diseases the primary, multiplying, invading cell supplies and maintains the foreign protein. In our experiments we have kept up the supply of foreign protein by the frequency of our injections.

There are certain things in Table 1 to which we may call attention. The loss in weight is gradual, with some slight fluctuations; it continued for some six days after the injections were discontinued, after which it gradually increased. The amount of urine is quite variable, but averages much less than normal, as it does in typhoid fever in man. The elimination of nitrogen is increased as it is in the fevers to which man is susceptible. The temperature of the fore period varied from 101.8 to 102.5. The first injection of egg-white was made at 1 p. m. May 27. During the next twenty-four hours the temperature kept below the normal average. It is noticeable that when the dose was increased from 2 c.c. to 4 c.c. there was a marked rise at the end of twenty-two hours. When this dose was again doubled, no marked effect on the temperature was seen until the next day. If one will follow down one of the morning hours he will see the gradual rise in the morning temperature so generally observed in the development of typhoid fever. Equally

TABLE 4.—THIS RABBIT RECEIVED SUBCUTANEOUSLY 200 MG. TYPHOID TOXIN (FILTERED, NEUTRALIZED, REFILTERED) EVERY 2 HOURS, BEGINNING 5/4/09. URINE AND WEIGHT TAKEN AT 1 P. M. 117 DOSES GIVEN IN 15 DAYS (23.4 GM. TYPHOID TOXIN)

Date.	Cage.	Wt.	Amt. Urine.	Sp. Gr. with Pic.	% Ash.	% N.	Temperatures.									Remarks.
							7	9	11	1	3	5	7	9	11	
5/3	12	....	....	......	....	....	.....	.....	.....	102.1	102.3	102.8	102.9	103.4	.....	Carrot food.
5/4	12	2820	*215	1.0068	1.00	.32	102.4	102.9	102.7	D102.8	D102.3	D103.3	D103.8	D103.9	.....	Carrot food.
5/5	12	2785	100	1.0102	1.35	.59	D104.2	D104.9	D104.9	D105.5	D105.8	D105.8	D106.2	D105.6	.....	Carrot food.
5/6	12	2810	75?	1.0122	1.80	.62	D104.9	D106.5	D106.0	D105.9	D104.9	D104.9	D105.8	D105.1	.....	Carrot food.
5/7	12	2825	22	1.0302	3.52	2.17	D104.4	D104.9	D105.4	D105.2	D104.4	D104.2	D104.6	D105.2	.....	Carrot food.
5/8	12	2790	52	1.0173	1.49	1.95	D104.2	D104.2	D104.2	D104.9	D104.3	D104.7	D105.5	D104.8	.....	Carrot food.
5/9	12	2770	60	1.0156	1.75	1.41	D103.3	D103.2	D103.3	D104.1	D104.3	D104.6	D104.0	D104.4	.....	Carrot food.
5/10	12	2800	110	1.0114	1.30	.81	D103.3	D103.3	D104.6	D103.7	D103.8	D104.0	D105.2	D104.4	.....	Carrot food.
5/11	12	2770	98	1.0120	1.42	.61	D104.0	D104.6	D104.6	D104.3	D104.8	D105.0	D104.8	D104.8	.....	Carrot food.
5/12	12	2750	136	1.0100	1.15	.65	D104.1	D105.0	D104.3	D104.6	D105.5	D105.1	D104.7	.....	D104.4	Carrot food.
5/13	12	2720	120	1.0114	1.42	.58	D103.8	D103.9	D104.5	D104.6	D104.5	D105.9	D105.3	.....	D104.6	Carrot food.
5/14	12	2670	140	1.0103	1.69	.70	D104.0	D103.8	D105.1	D104.9	D105.0	D104.8	D104.8	.....	D104.5	Carrot food.
5/15	12	2660	135	1.0107	1.48	.64	D104.0	D103.7	D104.1	D104.0	D104.7	D104.7	D104.3	.....	D104.5	Carrot food.
5/16	12	2670	158	1.0087	1.66	.43	D103.7	D104.3	D103.4	D103.5	D103.8	D104.7	D104.3	D103.8	.....	Carrot food.
5/17	12	2595	256	1.0054	1.06	.30	D103.7	D104.3	D104.5	D104.4	D104.4	D104.7	D104.5	D104.3	.....	Carrot food.
5/18	12	2690	184	1.0107	1.31	.28	D103.6	D104.0	D103.6	D104.2	D104.5	D104.0	D104.7	D104.4	.....	Dandelion food. 117 doses given. 23.4 gm. Ty. toxin.
5/19	12	2695	265	1.0106	1.19	.18	103.6	103.6	103.1	104.2	103.7	103.6	104.0	103.9	.....	Doses stopped.
5/20	12	2695	125	1.0153	2.43	.24	103.5	103.5	103.3	103.6	103.4	103.3	103.6	103.2	103.2	Dandelions.
5/21	12	2650	75	1.0159	2.24	.25	103.2	103.2	103.3	103.3	103.1	102.9	.....	103.3	102.8	Dandelions.
5/22	12	2680	76	1.0153	2.01	.36	103.0	102.8	102.8	102.8	103.0	103.2	.....	102.9	.....	Dandelions.
5/23	12	2540	...	......	....	....	.....	103.4	.....	103.1	.....	.....	.....	102.8	.....	Dandelions and crackers.
5/24	12	2555	†225	1.0119	1.69	.15	102.7	103.0	103.0	103.1	103.1	103.2	103.2	103.2	.....	Dandelions.
5/25	12	2650	210	1.0128	1.81	.36	102.9	103.1	103.2	103.7	103.8	103.8	103.4	103.3	.....	Dandelions.
5/26	12	2655	220	......	....	....	103.1	103.3	103.6	.....	.....	.....	.....	.....	.....	Dandelions.
5/27	12	2660	160	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dandelions.
								Rabbit alive 6/22/09.								
5/28	12	2610	275	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Dandelions.

* Amount of urine normal for 24 hours.
† For 48 hours.
D = Dose.

TABLE 5.—THIS RABBIT RECEIVED SUBCUTANEOUSLY 200 MG. TYPHOID TOXIN (FILTERED, NEUTRALIZED, REFILTERED) EVERY 4 HOURS, BEGINNING 4/30/09. URINE COLLECTED AND WEIGHT TAKEN EVERY MORNING. 80 DOSES GIVEN IN 19 DAYS (16 GM. TYPHOID TOXIN)

Date.	Cage.	Wt.	Amt. Urine.	Sp. Gr. with Pic.	% Ash.	% N.	Temperatures.									Remarks.
							7	9	11	1	3	5	7	9	11	
4/29	10	2750	...	......	....	....	.....	102.2	102.9	102.8	103.1	103.6	103.3	.....	.....	Carrot food.
4/30	10	2750	*250	1.0060	.92	.14	D102.4	103.1	D102.8	104.1	D104.3	105.3	D104.6	105.0	.....	Carrot food.
5/1	10	2560	245	1.0052	.77	.13	D104.7	105.3	D105.1	104.3	D104.0	104.2	D104.6	104.4	.....	Carrot food.
5/2	10	2610	460	1.0063	.70	.13	D104.2	104.2	D104.0	104.6	D103.8	103.8	D104.2	103.6	.....	Carrot food.
5/3	10	2560	350	1.0062	.92	.19	D103.3	103.8	D104.2	103.7	D104.0	104.2	D104.2	103.8	.....	Carrot food.
5/4	10	2555	270	1.0062	.90	.16	D103.6	103.5	D103.6	103.7	D103.7	104.2	D104.0	104.2	.....	Carrot food.
5/5	10	2575	215	1.0083	1.26	.24	D103.5	103.4	D103.7	103.8	D103.7	104.4	D105.1	104.5	.....	Carrot food.
5/6	10	2545	175	1.0075	1.13	.32	D103.4	103.3	D103.4	104.2	D104.9	105.0	D105.1	105.0	.....	Carrot food
5/7	10	2605	166	1.0098	1.45	.26	D103.7	103.5	D103.6	104.1	D104.0	104.6	D104.4	104.7	.....	Carrot food.
5/8	10	2540	132	1.0091	1.21	.21	D103.3	103.6	D103.7	103.6	D104.4	104.2	D104.6	104.2	.....	Carrot food.
5/9	10	2560	240	1.0087	1.26	.19	D103.2	103.3	D103.5	103.4	D103.7	103.6	D104.2	104.4	.....	Carrot food.
5/10	10	2600	280	1,0081	1.17	.25	D103.6	103.4	D103.7	104.0	D104.5	104.2	D103.9	103.8	.....	Carrot food.
5/11	10	2530	260	1.0090	.95	.22	D103.1	103.2	D103.6	103.6	D103.7	104.2	D103.8	103.8	.....	Carrot food.
5/12	10	2570	295	1.0072	.87	.19	D103.6	103.6	D103.9	104.0	D103.7	104.4	D104.3	.....	D104.4	Carrot food.
5/13	10	2540	295	1.0078	.89	.21	D103.6	104.5	D103.8	104.4	D104.7	105.0	D104.6	.....	D104.6	Carrot food.
5/14	10	2505	140	1.0123	1.36	.27	D103.3	104.5	D104.0	104.3	D104.8	105.2	D104.9	.....	D104.7	Carrot food.
5/15	10	2660	255	1.0093	.96	.18	D103.2	103.8	D104.2	103.8	D104.2	104.3	D103.9	.....	D104.1	Carrot food.
5/16	10	2565	185	1.0108	1.82	.27	D103.5	103.8	D103.8	103.6	D103.7	103.9	D104.2	103.7	.....	Carrot food.
5/17	10	2580	280	1.0071	1.22	.22	D103.0	103.5	D103.4	103.9	D104.1	104.6	D104.0	104.5	.....	Carrot food.
5/18	10	2625	174	1.0129	1.91	.28	D103.4	103.7	D104.1	103.7	D104.1	104.2	D104.4	104.5	.....	Dandelion food and carrots.
5/19	10	2575	215	1.0133	2.16	.18	103.3	104.0	103.5	103.7	104.1	103.9	104.3	104.0	.....	Dandelion food only. Doses stopped.
5/20	10	2470	210	1.0121	1.91	.25	103.5	103.4	103.9	103.4	104.0	103.7	104.6	103.8	103.5	Dandelion food.
5/21	10	2490	108	1.0171	2.40	.41	103.3	103.2	103.2	103.3	103.6	103.1	.....	103.3	103.0	Dandelion food.
5/22	10	2460	44	1.0199	2.38	.74	103.2	103.2	103.4	103.8	103.7	103.7	.....	103.2	.....	Dandelion food.
5/23	10	2440	263	1.0119	1.67	.23	.....	103.0	.....	103.4	.....	.....	.....	102.8	.....	Dandelion food and crackers.
5/24	10	2340	46	1.0151	1.40	.72	102.6	102.9	103.2	103.3	103.3	103.5	103.3	103.0	.....	Dandelions.
5/25	10	2495	175	1.0118	1.36	.27	103.2	103.4	103.7	103.3	103.2	103.6	103.6	103.6	.....	Dandelions.
5/26	10	2400	270	1.0115	1.67	.29	.....	.....	.....	.....	.....	.....	.....	.....	.....	
5/27	10	2520	220	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	
								Rabbit alive 7/9/09.								
5/28	10	2495	210	......	....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	

* Urine normal in amount for 22 hours.
D = Dose.

striking is the fact that for the most part the highest temperature for the day falls in the afternoon. When the injections were discontinued the temperature gradually fell and remained somewhat below the normal, as is often observed in typhoid.

We were anxious to determine the nature of the albumin in the urine—whether it was some of the egg-albumin injected or came from the serum albumin of the animal's blood. In order to determine this we injected 2 c.c. of the filtered urine of June 18 intra-abdominally into each of five guinea-pigs for the purpose of sensitizing them to whatever proteins the urine might contain.

Twelve days later two of the pigs received intra-abdominally each 5 c.c. of egg-white dilution (with an equal volume of water); two others had each 5 c.c. of fresh serum from a rabbit, and the fifth had a mixture of 2.5 c.c. of each of these fluids. All the animals were found to be sensitized, thus showing the presence of both egg-white and serum protein in the urine of the febrile rabbit. It is worthy of note that, while these animals developed the three stages characteristic of protein sensitization, the second and third stages were unusually prolonged and less acute than those generally observed in sensitized guinea-pigs. Of the two treated with egg-white, one died at the end of two hours and the other fifteen minutes later. Of the two treated with rabbit serum one died at the end of one hour, while the other lived for three hours. The one that had the mixture of proteins developed the symptoms more promptly than any of the others, but did not die.

If less than a fatal dose of the poisonous group of a protein be injected into an animal, recovery is speedy and at the end of two hours the same dose may be repeated.

The effect of a single dose is to lower the temperature, but when repeated doses are employed a continued fever develops. Within a few days, however, the time depending on the size and frequency of the dose, the animal dies. The effects of the free, unneutralized poison are shown in Tables 2 and 3. In these the poisonous portion of the protein of the typhoid bacillus was used.

The fact that an animal recovers so speedily from only a little less than a fatal dose of the protein poison shows that this poison must be quickly neutralized in the animal body. We are inclined to the opinion that this neutralization is secured only by the destruction of the tissue of the animal body.

It was shown by V. C. Vaughan, Jr., some years ago, that the neutralization of the poisonous group of the protein molecule greatly reduces its toxicity. This led us to try repeated subcutaneous injections of the poisonous group from the typhoid protein after neutralizing it with sodium bicarbonate. The results of these injections are shown in Tables 4 and 5:

We think that these investigations show that fever results when a foreign protein is introduced into the blood. This foreign protein is not necessarily of bacterial origin, though under natural conditions this is usually the case in continued fevers. The fever results from the cleavage of the foreign protein and from the effect of its split products on the body tissue. The object that Nature seeks to accomplish in this process is the destruction of the foreign protein. The effect of the high temperature *per se* on the infected animal is slight. The ill effects, the wasting of tissue and death in which fever often results are due to the action of the protein poisons that are set free.

UNDIAGNOSTICATED BRAIN ABSCESS

F. DOWNING, M.D.
BALTIMORE

In THE JOURNAL of May 22, 1909, Dr. Eshner reported a case of undiagnosticated brain abscess. In a day when chiefly successes are given to the medical press I feel like congratulating the Doctor for his courage in publishing a failure, for as such much be regarded all cases which are undiagnosticated, or are wrongly diagnosticated.

Though it is embarrassing to report mistakes, the science of medicine is often materially promoted thereby and the fear of criticism arising from a pardonable failure of diagnosis should not prevent one from speaking of the undiagnosticated. For that reason a parallel case to Dr. Eshner's is submitted.

History.—X., male, aged 27, was admitted to St. Joseph's Hospital May 3, 1909, complaining of severe headache. There was nothing of note in his previous history except that he had had an otitis media in early life which gave him very little trouble. General health had always been good; no history of venereal infection of any kind. For the past two years he had been somewhat out of sorts, not positively sick, but not feeling quite himself. Occasionally during the past six months he complained of pain in the left ear. About March 10, 1909, he was taken with what was thought to be influenza and was sick about two weeks, during which he had an attack of unconsciousness lasting a few minutes. In the first week of April he again became sick with what was said to be "typhoid-pneumonia" and was under treatment in another hospital for three weeks. He left feeling rather weak but otherwise apparently well. About one week later he began to suffer pain in the head, and had another spell of unconsciousness which came on suddenly and lasted only a few minutes. No convulsions were noticed by the family and no paralysis observed after the attack. Two or three days later he had a third attack of unconsciousness. During the night of May 2 he suffered intensely with headache and was taken to St. Joseph's Hospital the following day complaining of great pain in the head, especially on the left side.

Examination.—Patient fairly well nourished; complexion sallow; tongue coated; breath fetid; appetite good; no rigidity of muscles of neck; no vomiting; no vertigo; but rather obstinate constipation. Abdomen negative; few scattered râles and dulness at base of both lungs posteriorly. Expectoration contained a few diplococci but no tubercle bacilli. Heart negative; pulse 60; temperature 98.4 F.; respiration, 20.

Urine: cloudy, alkaline, specific gravity 1,025, no albumin, slight amount of sugar; under microscope, few epithelial cells and triple phosphates.

Blood: Leucocytes, 18,200; differential couunts, polymorphonuclear, 81; large mononuclear, 4; small mononuclear, 10; eosinophiles, 1; basophiles, 1; myelocytes, 3; number of cells counted, 337.

Eyes: Direct and consensual reflexes present but not so active as normal; surface of each disk raised, grayish-white, edges blurred and "fuzzy," veins enlarged and tortuous; no hemorrhages and no exudates in retina. Choked disk was somewhat more marked on left side. Central vision was good; there was no paralysis of the external ocular muscles and there was no nystagmus.

Ears: Right side showed evidence of previous otitis media which had fully healed with no impairment of hearing. On left side were a partly defective drum, little moisture in tympanum with faint odor, and slight impairment of hearing. No fistula, no sinking of posterior-superior wall, no tenderness about mastoid or along sigmoid groove or over the occipital protuberance.

Slight loss of power was observed in right hand and some little dragging of right foot. Patella reflex exaggerated at first on both sides, but absent after a few days in hospital; ankle clonus present on admission but absent one week later. Kernig sign present on both sides; Babinski sign present, also *tâche cérébrale*; areas of anesthesia over portions of right foot; no aphasia. Mental condition good; answered questions intelligently; was rather anxious about outcome of his illness.

Hospital History.—During his illness in the hospital the patient's chief complaint was headache. He vomited only once, had no chills, and never complained of vertigo. Potassium iodid had no effect. Two lumbar punctures drew no fluid whatever, though needle was clearly in spinal canal. Edema of optic nerve head increased only slightly, never became great, and examination of eye grounds three days before death showed no retinal hemorrhages. Central vision remained good up to two days before death. Temperature ranged from 96.4 F. to 100.5 F.; pulse from 60 to 110; respiration 16 to 24. For twelve days before death he would have several hours of coma alternating with periods of consciousness. The latter gradually becoming shorter, the periods of coma longer until 24 hours before dissolution, when deep coma set in. Death occurred May 25, 1909, on the twenty-second day of his residence in hospital.

Autopsy.—Brain with enveloping dura came out easily. There was no pus on outer or inner surfaces of dura. Vessels of pia on left hemisphere congested. There was discoloration with slight bulging of the cortex high up on left parietal lobe extending to the longitudinal fissure. Incision into this fluctuating area released from 6 to 8 ounces of foul-smelling pus. Abscess cavity involved the greater part of the parietal lobe and extended well down into the temperosphenoidal. The cortical wall of the abscess lay just posterior to the fissure of Rolando. No pus in any of the ventricles. Decided softness of brain tissue surrounding abscess cavity. Roof of petrous portion of temporal bone was found intact. No communicating channel between middle ear and abscess was made out. Mastoid and cerebral sinuses unfortunately were not opened. General section was not permitted.

The staff was divided in regard to diagnosis. Internists were for meningitis until this was negatived by lumbar puncture, the neurologist was for inoperable brain tumor, the otologist for brain abscess. In deference to the greater experience of the neurologist in intracranial affections, diagnosis of tumor prevailed. Headache, constipation, slight motor and sensory involvement on the right side and double choked disc were the chief symptoms. Abscess had probably existed for some time, patient's illness of March and April being due to this and not other causes. Although no direct route of suppuration was made out between middle ear and cerebral abscess, it is highly probable that the abscess was of otitic origin, infection occurring, if not by direct extension, by metastasis.

INGUINAL HERNIA OF THE BLADDER

H. E. RANDALL, M.D.
FLINT, MICH

Hernia of the bladder through the inguinal canal, while rare, is a condition that must be borne in mind when operating on any hernia, either femoral or inguinal. Failure to recognize this rarity has led to disastrous results. Cooley, in Keen's "System of Surgery," says that but three cases of hernia of the bladder were encountered in a series of over 1,900 cases of hernia in patients operated on at the Hospital for Ruptured and Crippled.

History.—Miss H., aged 20, first noticed a small bunch in the right inguinal region last April. This did not disappear and was painful at times, but she continued teaching school. The mass felt like a fatty growth. At times it was thought that an impulse on coughing could be felt and at other examinations no impulse on coughing could be detected. There were no bladder symptoms. Symptoms were similar to that of an enlarged tender gland.

Operation.—This was performed at Hurley Hospital, July 13, 1909. On cutting down to the mass it looked and felt like a lipoma except that the walls could be moved on each other as though there were a cavity in its center. The mass extended down into the inguinal canal. After separating the mass from the adhering structures it appeared as a diverticulum of the bowels. A sound passed into the bladder easily passed into this diverticulum, making the diagnosis of an extraperitoneal direct inguinal hernia of the bladder. The bladder was returned to the abdominal cavity and the abdominal wall closed with silk-worm gut sutures, with layer suturing with catgut.

The case of Justo is interesting because, after making a diagnosis of vesical hernia from the patient's symptoms, he cut into the fatty mass and opened the bladder because he was unable to distend this portion of the bladder by fluid, concluding that no vesical hernia existed.

New and Nonofficial Remedies

SINCE THE PUBLICATION OF THE BOOK "NEW AND NONOFFICIAL REMEDIES, 1909," THE FOLLOWING ARTICLES HAVE BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THEIR ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK ARE ASKED FOR.

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT SO FAR AS KNOWN IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

(Continued from page 530)

IODONE SURGICAL DRESSING AND DUSTING POWDER—Pulvis Iodoni Compositus.—Iodone surgical dressing and dusting powder consists of four parts of iodone $((C_6H_4C_2O_3)_2KI.I_4)$, a periodide of phthalic acid anhydride and 96 parts pure sterile talcum.

Iodone is prepared by treating a solution of phthalic-acid anhydride in acetic ether, with a solution of iodine and potassium iodide, and crystallizing the product from suitable solvents.

Iodone occurs in the form of dark green prismatic crystals which melt with decomposition at 163° C. (325.4° F.). When freshly prepared it is odorless, but on standing, traces of iodone are liberated, giving it a faint odor of iodine. It is gradually decomposed into phthalic acid, iodine, and potassium iodide by water, in which the decomposition products dissolve until a saturated iodine potassium iodide solution results. Any excess of iodine remaining in contact with the supernatant liquid remains unchanged. Alcohol, chloroform, and ether decompose iodone, but more slowly than water. Iodone crystals are stable in dry air; exposed to damp air, they gradually liberate iodine.

When 0.1 Gm. iodone is heated in a crucible at not more than a dull red heat, the compound chars, iodine vapor is driven off, and a residue of white potassium iodide remains. At a bright red heat, the latter is dissipated, leaving no weighable residue (absence of metallic impurities).

About 0.1 Gm. iodone, accurately weighed, is allowed to react, with occasional agitation, with a solution of 1 Gm. potassium iodide in 50 c.c. water. At the end of 15-20 minutes the titration of this solution with tenth normal thiosulphate solution should indicate the presence of not less than 51.1 per cent. iodine.

Iodone surgical dressing and dusting powder, assayed by the above process, should yield not less than 2 per cent. of available iodine. (About 2.5 Gm. should be taken for the assay.)

Actions and Uses.—Like iodine, iodone is a potent germicide and stimulant to the processes of repair in wounds. It is said to be useful in all conditions in which the local use of iodine is indicated, also as an antiseptic dressing in wounds and all local affections.

Dosage.—Its employment as a surgical dressing and dusting powder should be regulated on the basis of its containing 2 per cent. of available iodine, slowly liberated on contact with the moisture of wound secretions, etc.

Manufactured by The Henry C. Blair Co., 800 Walnut St., Philadelphia, Pa.
U. S. patents applied for.

PEPTONE—Peptonum.—Peptonum (Pharm. Belgica., edit. 3); Peptona Medicinalia (Pharm. Francaise, 1908).

Peptone is a product of the peptic or pancreatic digestion of albuminoid substances.

Peptone may be produced artificially as follows: Mince 1000 parts of lean beef freed from bone, etc., and mix it with 4000 parts of water, to this add a solution of 5 parts of pepsin in 1000 parts of water with 50 or 25 parts of hydrochloric acid. The mixture thus prepared is kept at a temperature not exceeding 50° C. (122° F.) until 10 Cc. of the filtrate or the addition of 1.5 Cc. of nitric acid in the cold no longer produces a precipitate. (Formation of a coagulum indicates incomplete peptonization.) The solution is then filtered, neutralized with sodium bicarbonate and evaporated to dryness in vacuo. It may be purified if necessary from adherent sodium chloride by dialysis or by precipitation by alcohol washing with ether and drying. By desiccating its concentrated solution upon plates peptone may be obtained in scales. (Brit. Codex.)

Peptone occurs as a white or yellowish-brown amorphous powder or in scales, with a somewhat cheesy but not unpleasant taste and nearly odorless. The pure substances when added to water hisses and froths at the same time evolving heat. It is soluble in water (1 in 20) forming a neutral solution or slightly acid. Aqueous solutions are pale yellow and clear or may be made quite clear by the addition of a little hydrochloric acid. The addition of alcohol precipitates peptone. Aqueous solutions are not coagulated by heat. No precipitate is formed in aqueous solution on the addition of nitric acid or potassium ferrocyanide (difference from albumen) nor is a precipitate formed by solutions of ferric chloride or cupric sulphate nor by saturation with ammonium sulphate or zinc sulphate (distinction from albumoses). The aqueous solutions are laevorotatory. Neutral solutions are precipitated by tannin and by various salts of mercury. Acid solutions give precipitates with bismuth potassium iodide, potassium mercuric iodide, bromine water and other precipitants of alkaloids. Peptone is colored yellow with Millon's reagent on warming a red color and precipitate; with cupric sulphate and caustic alkali a violet red color (biuret reaction). Picric acid gives yellow flakes. Peptone should not be precipitated by lead acetate, alum or hydrogen sulphide. On ignition it should not yield more than 2 per cent. ash.

Action and Uses.—Peptone is given as a nutrient in malnutrition and certain forms of dyspepsia. Its value is limited because larger amounts, often even small quantities, cause irritation.

Dosage.—Peptone is given in the form of pastilles, 5 Gm. in each prepared with gelatine. It is administered in rectal alimentation in the form of suppositories or it may be added to rectal enemata.

(*To be continued*)

Therapeutics

ECZEMA

This troublesome condition is often so difficult to cure that the thoughtful consideration of its treatment by Dr. E. G. Little (*British Medical Journal,* June 5, 1909) is well worth describing.

He makes the very pertinent dictum that it is the patient who has the eczema who is being treated, and not merely the eruption on the skin, and therefore believes it necessary that the patient should be subjected to a very careful physical examination. Also, the urine should be carefully analyzed, the diet should be investigated, and, in fact, no examination is too rigid to thoroughly understand the physiologic (or pathologic) condition of a patient who is suffering from eczema.

Little adopts Tilbury Fox's long descriptive definition of the disease, which it is well to bear in mind, viz.: "Eczema is a catarrhal inflammation of the skin which is mainly characterized by a peculiar discharge, stiffening linen and drying in thin yellow crusts, and having its stages of erythema, papulation, vesiculation, discharge, pus formation, and squamation more or less marked under different circumstances and followed in some cases by the secondary results of inflammation such as hypertrophy, edema and the like."

ACUTE ECZEMA

This is an erythematous eruption, occurring mostly on exposed surfaces of the body and due to cold or irritants. This eruption may abort at this stage, or it may go on to vesication, exudates, and even pus infection. The disease is not contagious.

The best treatment of this condition is rest in bed, with a low diet and the use of sedative lotions. Little believes that a pure milk diet is the best. The bowels should be kept loose, best with saline laxatives; it is unimportant which one is selected—Rochelle salt, effervescing phosphate of soda, or artificial Carlsbad salts, a teaspoonful or more (enough for one or two movements of the bowels), taken in a glass of hot water before breakfast.

Little finds the best lotion for the skin to be similar to the following:

℞.	gm. or c.c.		
Acidi salicyli	10	or	ʒiiss
Liquoris plumbi subacetatis	150		fl. ℥v

M. et Sig.: Add one tablespoonful to half a pint of milk, and apply to the inflamed skin every four hours.

[Prepare fresh daily, and shake before using.]

CHRONIC ECZEMA

Little urges the necessity for very carefully investigating the patient's work and the possible use of irritants on the parts affected with the chronic eczema, before attempting to treat the disease. In many patients an irritant cause will be found, which if removed, or corrected, will allow the skin to become rapidly healed. If, in the work of the individual, there is a necessity for coming in constant contact with the irritant that has caused the trouble, the cure will be retarded and perhaps prevented. Whether the cause of the eczema be found or not, strong antiseptics or irritants should never be used in the treatment of the condition. If the skin is moist or weeping or red and itching, Little finds that lotions are more sedative than ointments. He suggests the following:

℞.	gm. or c.c.		
Calaminæ præparatæ	2		gr. xl
Zinci oxidi	1	or	gr. xx
Aquæ calcis	10		fl. ʒiii
Olei olivæ	25		fl. ℥i

M. et Sig.: Apply with a brush or cotton swab.

This lotion may also be well applied by moistening gauze in the solution, placing it over the diseased skin, and holding it in place with thin bandages. The skin should never be heated with over-bandaging or thick coverings.

If the eczema has become purulent, the part affected should be subjected for twenty minutes to the action of a mild antiseptic solution, and perhaps the official Liquor Antisepticus will be of sufficient strength. It may, however, be necessary to use a bichlorid of mercury solution (1 to 3,000), or perhaps for a shorter period (ten minutes) one-half of a 1 per cent. solution of the official Liquor Formaldehydi, in water. The infected areas having been thus sterilized, the above soothing lotions may be applied.

When the oozing from the surface has about ceased and the skin shows a tendency to become dry, Little applies a paste in place of the lotion, and he believes Lassar's paste, or something similar, to be the best. The ingredients of this paste or ointment vary, but Little particularizes the composition as follows:

℞.	gm. or c.c.		
Acidi salicyli	2		gr. xxv
Zinci oxidi	25	or	
Amyli	25		āā, ℥i
Paraffin mollis	50		℥ii

M. et Sig.: Use externally.

If the skin shows considerable redness and irritation, the salicylic acid may be omitted, or the following ointment may be used:

℞.	gm. or c.c.	
Zinci oxidi	25	℥i
Aquæ calcis	25	or
Olei olivæ	25	āā, fl.℥i
Adipis lanæ hydrosi	10	ʒiii

M. et Sig.: Use externally.

This ointment having been spread thickly over the affected areas, a fine powder, as starch, may be dusted over the ointment so that it almost makes a dry dressing; no bandages are needed.

When the patient is first seen during the stage when dry crusts have formed and scabs from epithelial débris are present, local applications are useless until these are removed. To remove these scabs, wet dressings may be used, well applied by soaking clean, sterile gauze in warm boric acid solutions and applying it to the region of the crusts and scabs. These moist applications are then covered with an oil silk or rubber tissue and kept in place with a bandage. These dressings should be changed as often as they become dry. If pus organisms are present, the skin must be made sterile with one of the antiseptics, and when clean of crusts the above lotion or paste may be applied.

If chronic pus infection is present and the disease is not readily controlled by this treatment, vaccine therapy should be used.

If patches of inveterate eczema have persisted months or even years, associated disease or persistent causes should be suspected. These may be "ichthyosis, varicose veins, gout, diabetes, or tuberculosis." If any of these conditions are found, they should be properly treated, and with their improvement the skin condition will generally improve. A healthy exfoliation of the thickened epidermis may be aided by applying every four or five days the following lotion:

℞.	gm. or c.c.	
Phenolis liquefacti	15	or
Liquoris picis alkalini (N. F.)	15	
Glycerini	15	
Alcoholis	15	āā, fl.℥ss

M. et Sig.: Paint on the part with a brush, or swab, once in four or five days.

Each day during the interval the diseased surface should be dressed with some soothing lotion or ointment.

If the above phenol solution is too painful, the sensation of the parts may be first dulled with a cocain application.

In chronic eczematous patches occurring about the junction of the skin and mucous membranes, as the lips, vulva, anus, and on the nipple, nitrate of silver applications may be substituted for the above phenol combination. The fissure, or irritated, or inflamed part may be touched lightly with a swab wet with a nitrate of silver solution (15 to 25 per cent.). This may be done at intervals of four or five days, for several times, if necessary. However, prolonged nitrate of silver applications are inadvisable, as they may tend to prevent healing, and perhaps even give sufficient irritation, in older people at least, to cause pathologic growths.

Little has found picric acid in from 0.5 to 1 per cent. solution, in water, valuable as an application for itching in pruritus ani with fissures, and for itching of other excoriated surfaces.

Eczematous patches or fissures about the nipple occurring during lactation are often cured by one or two nitrate of silver applications, great care as to cleanliness after nursing, and by the continuous applications of saturated boric acid solutions.

In very chronic dry eczema Little obtains satisfactory results by applying gauze saturated with tarry preparations, and then covering the gauze with oil silk and bandaging for twenty-four hours. This same treatment may be several times repeated, if necessary. The Unguentum Picis Compositum of the National Formulary would be a suitable preparation for such use.

ECZEMA OF CHILDREN

The most frequent cause of infantile eczema seems to be exposure to cold, and such local irritants as hard water, strong soap, dirt and irritation caused by lack of cleanliness and neglect. The treatment is to treat properly any parasitic disease that may be present, to keep the parts that are subject to moisture scrupulously clean, to prevent the use of any irritant on the child's skin that could perpetuate the disease, to keep the part comfortably warm but not overheated, and to prevent scratching by any method that seems best. A simple strawboard splint on the arms, long enough to prevent flexion at the elbows, is generally sufficient to prevent scratching. The above calamine lotion and Lassar's paste will aid in curing the condition, but at times the disease in infants is difficult to cure.

Overfeeding and underfeeding should be prevented. The bowels should be carefully watched, both to prevent constipation and to see that the food is satisfactorily digested, and agrees with the child. It is sometimes advisable to cause the bowels temporarily to be rather loose. While the excessive use of artificial foods is often a cause of eczema in young children, still it occurs when the child is breast fed. Certainly, it is inadvisable to allow a restricted diet of artificial food that contains large amounts of salts. Large amounts of alkalies are certainly contraindicated, and the same is true of much acids. Water should be freely given. Change of air to the country or the seashore seems often advisable. This is especially true during the heated term, and overheating houses in winter, causing the child to become very warm, will prolong the disease.

Little does not believe that warm bathing of the eczematous child is inadvisable, and believes that the part may be bathed at any stage, with the precaution to use no strong alkaline or irritating soap, and to use either soft water or water that has been made soft by the addition of soothing powders. The inflamed area should never be rubbed, but should be dried by mopping with soft towels or gauze.

If there is much swelling or infiltration of the skin in children, Little administers calcium lactate, doubtless on the presumption that calcium prevents or inhibits exudation. As soon as the edema is less, he stops the administration of the drug. It may be given as follows:

℞.	gm. or c.c.		
Calcii lactatis	3	or	gr. xl
Aquæ cinnamomi	100		fl.℥iii

M. et Sig.: Two teaspoonfuls, in water, three times a day, before meals.

Nothing will hasten the improvement of these little patients more than fresh air, quiet, rest, and the prevention of mental as well as physical irritations.

Chinese Surgery.—Medical missionaries in China say that the natives will bear without flinching a degree of pain from which the stoutest of us would shrink in terror. A woman in Shao-wu, afflicted with a ulcer of the leg, was treated by a native "doctor." One day he came to the mission hospital to show the physician in charge a "string" which he calmly announced he had pulled from the wound. It was the sciatic nerve! To people suffering from such barbarous methods, and to whom anesthetics are unknown, the merciful methods of foreign doctors in the mission hospitals seem like miracles.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

103 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, AUGUST 21, 1909

THE BACTERIOLYTIC ACTION OF BILE ON THE PNEUMOCOCCUS

Jaundice in pneumonia has generally been considered a very unfavorable prognostic sign indicative of an extreme grade of toxemia produced by the pneumococcus. If this explanation is true, the phenomenon first described by Neufeld[1] in 1900 of the lytic action of bile on the pneumococcus stands in almost paradoxical contrast. If one drop of fresh rabbit's bile is added to 20 drops of a broth culture of pneumococci in a test tube, there is almost immediate clearing up of the cloudy fluid, due, as is observed in a hanging drop under the microscope, to complete lysis of the bacteria. Bile salts were later found to act in the same way. The reaction is specific, as no other organism is dissolved by bile, and it has been of considerable importance in differentiating streptococci from pneumococci. The so-called *Streptococcus mucosus capsulatus,* which in most respects behaves like a variety of pneumococcus, is dissolved by even less bile than is required for the pneumococcus.

Recently Grixoni[2] has reported from Grocco's clinic a series of most interesting experiments conducted both *in vitro* and *in vivo.* All strains of streptococci tested gave negative results. Using six different strains of pneumococci he showed that the reaction depends largely on the bile used, as is to be expected from the varying chemical composition of "normal" bile at different times. Rabbit bile is more active than ox bile, and fresh sterile bile acts more rapidly than contaminated bile. The lytic power is lost at room temperature or at 37° C., and is damaged by heat of sterilization, but is retained if the bile is kept on ice. Both sodium glycocholate and taurocholate have lytic power, the latter acting more powerfully; but the dissolving power of the combined salts, each in 2 per cent. solution, is less than that of fresh bile, although greater than that of bile heated to 120° C. for an hour.

Neufeld[3] a short time before the publication of Grixoni's results confirmed his original observations, and showed that a direct relation exists between virulence and rapidity of lysis by bile. Grixoni independently reached the same conclusion, and found that a culture freshly isolated from the blood of an infected animal is dissolved in about one-fourth the time necessary for the same organism after it has grown on artificial culture media. Grixoni's animal experiments almost shatter any dreams of a practical therapeutic application of this reaction, at least in systemic pneumococcus infections like pneumonia. Subcutaneous, intraperitoneal and intrapleural injections of bile, or bile salts, protect only when given at the same place and time as the bacterial injection, so that what practically occurs in the experiments is an injection of organisms already dissolved. Given in any way, bile has no prophylactic power, while intravenous doses hasten the death of the animal, probably on account of the toxic action of the bile itself.

Remarkable as is the phenomenon of lysis by bile, no explanation of its cause has yet been offered. Neufeld suggests the possibility of its being related in some way to the capsules of the pneumococcus, but as no other encapsulated organisms yield the reaction no definite conclusions are to be drawn. At present it is a phenomenon *sui generis,* of importance in the differential diagnosis between pneumococci and streptococci and in testing the virulence of pneumococci.

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[1] Ztschr. f. Hyg., xxxiv, 1900, 454.

[2] Riv. critica di clin. med., x, 1909, 17-33.

[3] Arb. a. d. kaiserlich. Gsndhtsamte., xxviii, 1908, 572

THE PURIFICATION OF WATER BY OZONE

Ozone has been called the ideal agent of purification since it is only a more active form of ordinary oxygen, already existing normally in the atmosphere in small quantities, and since its application to water leaves behind no foreign chemical residue. The first attempt (1889) to sterilize water with ozone was reported by Fröhlich,[1] and was carried out with an apparatus manufactured by Siemens and Halske of Berlin. The Siemens and Halske method was installed later on a larger scale at Wiesbaden and Paderborn in Germany, and is said by Erlwein[2] to have given highly satisfactory results at those places. Other forms of ozonizing apparatus have been devised by Tindal (since improved by De Frise), Marmier and Abraham, Vosmaer and Otto, and are in use in several installations in Holland, France and Germany. The process has been investigated by a number of competent bacteriologists, including van Ermengem, Roux and others, and has shown in practically all cases excellent results. Bacteria in the water, including *B. coli,* are destroyed to such an extent that an initial content of 2,000-4,000 per c.c. is reduced to 1 or 2 per c.c. or even less. There is consequently no doubt as to the bacterial efficiency of the process.

The nature of a water treated by an ozonizing system is of some importance since it is plainly extravagant to employ ozone for the oxidation of any large quantity of chemical impurity. The method, for example, is hardly applicable to the direct treatment of a turbid river water containing a considerable quantity of organic matter in solution or suspension. At the St. Maur municipal waterworks of the city of Paris, where the DeFrise ozonization method is employed with considerable success for furnishing a portion of the Paris drinking water supply, the water of the river Marne is subjected to a preliminary clarification before it is ozonized. The river Marne is highly polluted with sewage, but after the water is passed through beds of sand and gravel and then treated with ozone it possesses a degree of bacterial purity indicated by the fact that *B. coli* is not found when quantities as large as 200 c.c. are tested.[3]

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[1] Electrotechn. Ztschr., 1891, p. 344.

[2] Ber. über d. XIV Internat. Kong. f. Hyg. u. Demog., 1908, 3, p. 195.

The question of the relative expense of ozonization of large public water supplies as compared with that of sand filtration or of certain forms of mechanical filtration is a point on which it is not easy to secure definite information based on data covering a considerable period. Erlwein estimates that with a large plant the cost might be as low as about one-half cent per 1,000 gallons, and Rideal gives about two-thirds of a cent per 1,000 gallons as the actual cost of ozonization at St. Maur. Neither of these estimates includes the cost of preliminary treatment of a polluted water. In the absence of any uniform system of waterworks accounting, it is very difficult to obtain trustworthy information concerning cost of installation and operation of purification systems, though this is a vital point.

To justify the introduction of any new system of water purification, even though it be one of recognized efficiency, the question of comparative cost should be presented in such a way as to convince reasonable inquirers. This has not yet been done with the ozonization process.

THE FIRST PHYSICIAN

The first physician of whom we have any definite record is evidently I-em-Hetep, who lived in the reign of King Tchser, a monarch of the Third Dynasty of Egypt, the date of whose reign is somewhat uncertain, but is probably not later than 4500 B. C. In the light of recently awakened interest in psychotherapeutics and the use of the mind to influence the body, it is extremely interesting to note that his name, I-em-Hetep, means "the bringer of peace." According to tradition, he had two other titles, one of which was "The Master of Secrets" and the other "The Scribe of Numbers." The reference embodied in the first of these titles is easy to understand. The second is less easy of comprehension. Perhaps the writing of his prescriptions required an unusual knowledge of numbers in those days, for even at that time the Egyptians had a great many remedies that they employed for diseases of various kinds and many methods of administering them. He seems to have been held in high honor by his generation and to have received ample rewards for his professional work, for the well-known "step pyramid" at Sakkara, the old cemetery near Memphis, is attributed to him, showing that he was only next to the king in honor and also very probably in revenue.

Even more interesting than this, however, is the honor that was paid to him after death. Men had learned to trust him so much, they had come to realize how thoroughly he fulfilled his name, the "bringer of peace," and how often he had helped them in suffering, that after his death they concluded that he must have had more than human knowledge and so they made a deity of him and worshipped him. While doing this they were careful, however, to maintain his humanity as the principal element for their reverence. While they made statues of him these never have a beard, which was the distinct mark of divinity at that time. He is represented as a placid-looking man seated with a scroll on his knees and a look of very sympathetic humanity on his face. For over four millenniums he continued to be held in high honor among the Egyptians, and the hospitals erected in various places were always placed under his protection. When after Alexander's time the Ptolemies, who were originally Greek, came to rule in Egypt, I-em-Hetep came to be identified with Æsculapius, the Greek physician of about 1200 B. C., whose wonderful success in relieving men's ills, bodily and mental, had caused the Greeks after his time, in similar fashion, to make a deity of him.

While I-em-Hetep is the first physician among the Egyptians, he must not be considered an isolated figure in Egyptian history, for every few centuries since we have the story of some distinguished man in medicine whose merits have given him a place in the memory of men ever after. About three centuries after I-em-Hetep came King Athothis, who is said to have written the first text-book of anatomy. A few centuries later came the distinguished surgeon on whose tomb, in the same cemetery of Sakkara or Saqqârah near Memphis, the old capital of Egypt, not far from the present city of Cairo, is to be found the series of pictures of surgical operations which are the earliest extant and which were described in The Journal, Nov. 9, 1907. The Ebers papyrus gives us a still more detailed picture of Egyptian medical life and education, so that it is evident that for about 3,000 years before the writing of this papyrus there was great devotion to medicine and surgery on the part of the men who reached high distinction among their fellows in Egypt. In a word, it is possible, as a consequence of recent discoveries in Egyptian history, to trace the medical profession with its members occupying places of honor and confidence among men for more than 6,000 years.

INDUSTRIAL OVERSTRAIN

While more attention is being continually given to industrial diseases, it is likely to be the feeling of the physician that this is a special field which concerns mostly the practitioner in the industrial centers. Those who have to do with painters or other lead workers are naturally interested in plumbism; other groups will find it to their advantage to study grinder's phthisis, etc. But there is a more general relation of labor that demands the attention of the medical profession and must interest every physician who has patients of the laboring class. While a trade may be free from poisons or other special tendencies to disease, it may contribute to the production of disease by the severe and exhausting character of the labor itself. Josephine Goldmark[1] calls attention to the influence of fatigue and the need of a thorough investigation of its effects in predisposing the system for other diseases, such as the infections. The prevalence of neurasthenia among the working population and the increase of other nervous diseases among tradesmen and laborers are phenomena whose relation to fatigue and long working hours it would be well to investigate. This author calls attention to the lack of study of this subject on the part of American hygienists, although foreign investigators have taken it up and it is receiving emphatic attention from the Permanent International Commission for the Study of Professional Maladies, a French organization on which American medicine has no representative. Attention is called to the fact that the 1910 meeting of the International Congress of Hygiene and Demography, to be held in the United States for the first time, will give an opportunity for the presentation of the results of studies of the effects of fatigue and long hours under American industrial conditions. Such a study would be exceedingly beneficial as a basis for framing suitable laws to regulate such conditions and would also give the medical profession a new insight into the pathogenesis of many common ailments.

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[3] Rideal: Jour. Roy. San. Inst., 1909, xxx, 32.

Medical News

ILLINOIS

Chicago

Infantile Mortality.—The total deaths of infants under 1 year of age during the past week jumped from 142 to 194, an increase of 52 over the preceding week, and an excess of 13 over the corresponding week of last year. Gastrointestinal disorders are accountable for 185 deaths, or more than 31 per cent. of the total for the week from all causes; 167 of these 185 deaths were among children under 2 years of age. This record exceeds the preceding week by 39, and is 23 higher than the corresponding week of last year. Notwithstanding these increases, the general death rate was more than 4 per cent. lower than the August average and 6.5 per cent. below the rate of the corresponding week of 1908.

MARYLAND

Baltimore

Smallpox on Steamship.—The North German Lloyd steamship *Main* was delayed at quarantine August 10 by the discovery of a case of smallpox among its steerage passengers. After a thorough fumigation, she was allowed to go to her pier. There were 450 passengers aboard the vessel.

Typhoid Decreasing.—The health report for week ending August 14, shows a large falling off in typhoid fever cases. There were 86 cases for the same period in 1908 and 46 in 1909. This result is attributed by the health commissioner to the unusually dry season and the care taken of the city's milk supply.

NEW YORK

Home for Destitute and Sick Children.—The Holiday Farm, organized to maintain a home for the reception and temporary treatment of indigent or destitute sick and convalescent children, was incorporated August 5, with its principal office at Rhinecliff.

No Insurance Company Hospital.—The application of a life insurance company for permission to acquire real estate for the purpose of erecting thereon a tuberculosis hospital has been denied by Superintendent Hotchkiss. The denial rests on the insurance law which does not permit insurance companies to acquire real estate excepting such as is required in the transaction of their ordinary business, i. e., making and selling insurance.

National Tuberculosis Hospital.—It is reported that 27,000 persons in 28 states will contribute a little over 9 cents a month each to build and maintain a tuberculosis sanitarium at Liberty, which is to be established by the Workmen's Circle, a fraternal insurance organization. Immediate steps will be taken toward the erection of the hospital as soon as the application is granted by Health Commissioner Porter. The institution will accommodate 40 patients.

New York City

Gone Abroad.—Dr. and Mrs. W. P. Cunningham, Dr. and Mrs. Samuel G. Gant, Dr. and Mrs. Henry D. Chapin, Dr. and Mrs. Henry B. Delatour, Drs. William E. West and Michele Accetta and Dr. and Mrs. William V. Hayes have sailed for Europe.

Milk Famine Threatens.—The persistent drought throughout New York and the eastern states is responsible for a milk famine, which has already raised the price of milk. Dealers are curtailing their output in every possible way, and a meeting has been called to consider the problem in New York.

Gas Checks for Charity.—From the gas rebate fund, which amounts to about $11,000,000, the committee on the prevention of tuberculosis of the Charity Organization Society has received as a voluntary contribution $14,244. This money will be used by the committee in its crusade against tuberculosis, and will enable the committee to pay for an exhibit to be made in all the schools, preparations for which are now under way.

Work of the Junior Sea Breeze Hospital.—The report of Junior Sea Breeze, a hospital maintained by John D. Rockefeller through the Association for Improving the Condition of the Poor, shows that there have been about twice as many dispensary cases as during the same time last year, while, although the hospital is filled to the extent of its capacity, the total number of admissions has been only about one-half what it was during the same time last summer. While it is admitted that the cool summer may have something to do with the falling off, the real explanation is attributed to the work of the visiting nurses who send the babies to the dispensary before they become dangerously ill. The number of deaths at the hospital has been very small.

Hospital Notes.—Plans have been filed for remodeling the bacteriologic laboratory, improving the lighting and adding accommodations on the first floor of St. Luke's Hospital for animals to be used in experiments. The improvements will cost $25,000.——Plans have been filed for remodeling the upper floor of the City Hospital, Blackwell's Island, and erecting an operating theater. There will be a surgeon's room, a workroom for nurses and an *x*-ray room, together with several recovery rooms. These and several minor improvements will cost $30,000.——Elaborate plans have been approved and a liberal appropriation has been made for the establishment of rest stations, comfort stations and medical stations in all parts of the city during the Hudson-Fulton celebration. One-third of the churches have planned to keep their doors open and to provide nurses from 9 a. m. to 9 p. m. Tents will be put up as emergency hospitals, each containing twelve cots, and nurses, orderlies and physicians will be on duty at all hours. Ambulance launches will be in service during the water celebration.

Buffalo

Personal.—Drs. John Hudson Grant, George A. Himmelsbach and James W. Putnam have gone abroad.

Isolation Hospital Condemned.—Dr. Walter Goodale, superintendent of the temporary Municipal Isolation Hospital, condemns the building, which, originally a public school building, was condemned and abandoned. A site should be provided by the city for a modern hospital for communicable diseases.

Esculapian Club Election.—The Esculapian Club has elected the following officers: President, Dr. Cornelius J. Carr; vice-president, Dr. Irving W. Potter; secretary, Dr. Julius Ullman; treasurer, Dr. Albert J. Colton; and advisory council, the president, and Drs. Francis M. O'Gorman and Frderick S. Hoffman.

Hospital Notes.—Plans have been drawn for an addition to the German Deaconess' Hospital, to cost about $80,000. The addition will be four stories in height, fireproof and will provide 75 new rooms and a well-equipped and complete operating room.——Riverside Hospital, Lafayette avenue, has been enlarged, taking in the Riverside Accident Hospital and the Marine Hospital. The institution is under the charge of Dr. Lillian Craig Randall.

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[1] The Survey, July 10, 1909.

Academy Elects Officers.—The following officers have been elected for the Buffalo Academy of Medicine: President, Dr. Earl P. Lothrop; secretary, Dr. Harry R. Trick; treasurer, Dr. Lawrence Hendee; trustee, Dr. Grover W. Wende; chairman section on medicine, Dr. Thomas J. Walsh, and secretary, Dr. Henry P. Frost; chairman section on surgery, Dr. Thew Wright, and secretary, Dr. James A. McLeod; chairman section on obstetrics and gynecology, Dr. Burt C. Johnson, and secretary, Dr. James F. Whitwell; chairman section on pathology, Dr. Frederick J. Parmenter, and secretary, Dr. Norman K. McLeod.

NORTH CAROLINA

Personal.—Dr. J. Edward Smoot, Concord, who was operated on for appendicitis at the Salisbury Sanitarium recently, is improving.——Dr. William J. McAnnally, High Point, is seriously ill with septicemia, due to the bite of a spider.——Dr. William Allen, Charlotte, has been elected secretary-treasurer of the Associated Charities of the City of Charlotte.

Impure Mineral Waters.—Under a recently enacted law authorizing the State Board of Health to make examinations from time to time, as it may see fit, of the various mineral waters offered for sale throughout the state, examination of a number of specimens of bottled waters has been made, showing the presence of colon bacilli in a lithia water bottled in Virginia and sold widely throughout the United States.

State Health Officer Commended.—The Medical Society of the State of North Carolina, on the retirement of Dr. Richard H. Lewis as secretary of the Board of Health, adopted resolutions expressing the regret with which they accept his resignation, and its conviction that he has done more, both in his official and individual capacity, than would have been possible for any other one to have done, and commending his work in saving them from impending adverse legislation, and having secured such salutary measures as are responsible for their present advanced position in sanitary work.

State Hospital for Tuberculosis.—The State Hospital for Tuberculosis in Moore county has been visited by the assistant secretary of the State Board of Health, and has been closed pending needed sanitary improvements. The institution is expected to be opened next month with accommodation for 50 patients, and after January 1 next accommodation for 50 additional patients will be provided. A strong sentiment exists among leading phthisiologists of the state that the present site for the institution should be abandoned, and a new location secured in the mountain section of the state.

NORTH DAKOTA

New Hospital Opens.—Dedicatory exercises of the Bismarck Hospital and Deaconess Home were held July 4. The hospital is a three-story structure, 40 x 120, and is well built and thoroughly equipped.

Physician Wins Suit.—In the suit against Dr. Edward J. Hagen, Williston, in which damages were claimed on account of alleged malpractice, the jury, after five hours' deliberation, brought in a verdict in favor of the defendant.

Sanitarium News.—Bottineau, Dunseith, Cando and Walhalla are working to secure the State Sanitarium for Tuberculosis, recently authorized by the legislature.——Bids were opened and the contract let on July 24 for the new $10,000 addition to the Fargo Sanitarium.

OHIO

Personal.—Dr. Paul W. Tappan, Dayton, has been elected first lieutenant O. N. G.——Drs. W. Watson Conger, Toledo, William P. Love, Youngstown, and Adolph J. Girardot, Toledo, have been taking the course of instruction at the Government School, Sparta, Wis.——Dr. R. H. Bishop, Jr., has succeeded Dr. Frank Vincent as a member of the staff of the Tuberculosis Dispensary, connected with the Western Reserve University Medical School, Cleveland.——Dr. William J. Means, Columbus, was seriously injured in an automobile accident, July 16.——Dr. and Mrs. George F. Brubaker, Springfield, have sailed for Europe.——Dr. Louis M. Early, physician of the State School for the Blind, Columbus, has retired and has been succeeded by Dr. Isaac B. Harris.

Cincinnati

Roentgenologists Meet.—Medical men, interested in *x*-ray work, met August 7, at the office of Dr. Henry Kennon Dunham and organized the Cincinnati Roentgen Ray Society, with seven charter members. Dr. Dudley Webb was elected secretary.

PENNSYLVANIA

State Medical Society Meeting.—The annual meeting of the Medical Society of the State of Pennsylvania will be held in Philadelphia, September 27 to October 1.

Tablet Presented to Hospital.—A bronze tablet of the late Dr. John Fay is to be presented to the Altoona Hospital to be placed in the reception room early next week. Addresses will be made on behalf of the staff by Drs. William S. Ross and Frederick H. Bloomhardt, Altoona, Dr. Henry H. Brotherlin, Hollidaysburg,and others.

Hospital Notes.—St. Margaret's Memorial Hospital, which was equipped for service ten years ago, but has been unused since that time because of the lack of a maintenance fund, is soon to be opened. The hospital has a capacity of 100 patients.——The president of the Bethlehem Steel Works has ordered the closing of the Bethlehem Steel Works Hospital.

State Board of Examiners for Nurses.—The examining board for nurses, appointed under the act passed in the last legislature, consists of Miss Ida F. Giles, Pittsburg, Miss Roberta M. West, Erie, and Drs. Alice M. Seabrook, William S. Higbee and Albert E. Blackburn, all of Philadelphia. The board met for organization at Harrisburg, July 27, and elected Dr. Higbee, president; Miss West, vice-president, and Dr. Blackburn, secretary-treasurer. The board is now ready to receive applications for registration in compliance with the act, through its secretary.

Personal.—Dr. Samuel H. Gilliland, Marietta, has sailed for Europe.——Dr. Percival A. Herman, Middleburg, has been appointed a medical inspector in the department of tuberculosis of the State Health Bureau.——Dr. Hamilton K. Beatty, Pittsburg, superintendent of the sanitation bureau of the City Health Department, was presented, July 7, by the chief inspectors of the stations over which he presided, with a gold shield.——Dr. J. William Schultz, Tremont, has been elected president and Dr. Theo. C. Fegley, Tremont, secretary of an organization composed of the physicians in the territory extending from Pine Grove to Hegins.——Dr. Mary M. Wolfe, resident physician to the State Hospital for the Insane, Norristown, has resigned, to take effect October 1.——Dr. Wilmer R. Batt, Harrisburg, one of the three representatives of the United States at the meeting of the International Commiission for the Revision of the Classification of Causes of Death and Illness, has sailed for Europe.

Philadelphia

Clinic Opens in New Location.—The Philadelphia Clinic for the Free Treatment of Throat and Chest Diseases has removed to its new quarters at 2114 Lombard street. Free clinics are held at the institution on Mondays, Wednesdays and Fridays at 3 p. m.

Personal.—Drs. Henry R. M. Landis, Charles K. Mills, Eugene L. Van Sant and John McLernon have sailed for Europe.——Dr. Sheridan P. Manship has been appointed a police surgeon.——Dr. Walter W. Roach has succeeded Dr. William Graton, resigned, as medical inspector.

Bequests to Tuberculosis Sanitaria.—Payment of the $5,000 bequest of John G. Brill to the Free Hospital for Poor Consumptives, White Haven, have been made by representatives of the estate.——Dr. Lawrence F. Flick, director of the Phipps Institute, has received an offer from one of the Philadelphia hospitals of six beds, the expense of which will be paid by Henry Phipps.

Christmas Stamp Money Apportioned.—The funds received from the sale of Christmas stamps for the tuberculosis cause have at last been apportioned as follows: Free Hospital for Poor Consumptives, White Haven, $2,500; Pennsylvania Society for the Prevention of Tuberculosis, $1,000; Germantown Hospital, $1,500; Grandview Institution for the Cure and Treatment of Tuberculosis, $1,000, and Philadelphia Protestant Episcopalian City Mission Home for Consumptives, Chestnut Hill, $2,000. The committee recommended that the balance of more than $3,000 be retained for distribution to tuberculosis institutes which have not yet applied for relief.

TEXAS

New Sanitarium.—Dr. Andrew J. Bell and associates are to erect a twenty-room sanitarium at Quanah, to cost $10,000.

Building for Doctors.—The Dallas Medical and Surgical Building Association has been organized to erect an office building to be devoted to professional men entirely and to cost $500,000.

Acquitted.—In the district court at Rusk, July 3, a jury returned a verdict of not guilty in the case of the State vs. Dr. J. J. Lockhart Forest, charged with the murder of Ollie Branch, about two years ago.

Personal.—Dr. William M. Brumby, Austin, president of the State Board of Health, has returned from a trip of inspection to Cuban, Central American and Mexican ports, and reports great progress in sanitation.——Dr. John W. Tottenham has been appointed health officer of Brownwood.——Dr. John H. Florence, Galveston, has been acting as state health officer during the absence of Dr. Brumby.——Dr. G. W. Basket, Van Alstyne, has been elected medical director of the Texas Homeo. Sanitarium, Llano.

UTAH

Faculty Changes.—Leon W. Hartman, associate professor of physics, and William Blum, assistant professor of chemistry, have severed their connection with the University of Utah.

Sanitary Bulletin.—Dr. Theodore B. Beatty, Salt Lake, secretary of the State Board of Health, has issued an imperative bulletin to all health officers of the state, in which he urges them to use the utmost vigilance in the enforcement of the law requiring the disinfection of all discharges from typhoid fever patients.

New Hospital.—The contract for the construction of the Dee Memorial Hospital, Ogden, has been awarded for $75,000. The building, when completed and equipped, will have cost more than $100,000. It will be five stories in height, 149x60 feet, will contain accommodation for eighty patients, and is to be completed by February 1, 1910.

Care for Veterans.—Dr. William F. Beer, in charge of the forty-third annual encampment, G. A. R., Salt Lake City, has arranged for a thoroughly-organized medical and nursing corps to furnish first aid and provide medical attention for all cases of illness and accidents during the encampment. An emergency hospital has been secured in the Boston Building and a special retention hospital has been arranged on the grounds of the Latter Day Saints Hospital. Automobile ambulances are to be placed at various stations along the line of march.

VERMONT

Alumni Election.—The annual meeting of the Alumni Association of the medical department of the University of Vermont, Burlington, was held June 29, and the following officers were elected: President, Dr. U. A. Woodbury, Burlington; vice-presidents, Drs. William N. Bryant, Ludlow; Patrick E. McSweeney, Burlington; Michael F. McGuire, Montpelier; Charles L. Fletcher, Dover, N. Y.; and Don D. Grout, Waterbury; and, secretary-treasurer, Dr. Lyman Allen, Burlington.

Society Meetings.—At the annual meeting of the Lamoille County Medical Association, held in Burlington, July 28, the following officers were elected: President, Dr. George L. Bates, Morrisville; vice-president, Dr. Harry W. Barrows, Stowe; secretary-treasurer, Dr. William M. Johnstone, Morrisville; censors, Dr. W. M. Johnstone, Morrisville, John C. Morgan, Stowe, George H. N[illegible] uditor, Dr. George L. Bates, Morrisville; [illegible] state society, Dr. Archibald J. Valleau, [illegible] annual meeting of the Addison County Association, held in Middlebury, July 22, the following officers were elected: President, George F. B. Willard, Vergennes; vice-president, Dr. Robert W. Prentiss, East Middlebury; secretary, Dr. Frank C. Phelps, Vergennes; treasurer, Dr. Frank T. Briggs, Bristol; and librarian, Dr. Merritt H. Eddy, Middlebury.

VIRGINIA

Sanatorium Opens.—The new State Sanatorium for Tuberculosis at Roanoke Red Sulphur Springs, was opened to receive patients July 16.

Medical Society Organized.—Ocean View Medical Society has been organized at Norfolk, with the following officers: Dr. Southgate Leigh, Norfolk, president, and Dr. Wiilliam D. Turner, Shoal Bay, secretary.

Medical Society Meets.—The Fairfax Medical Society held its annual meeting in Alexandria August 5, and elected the following officers: President, Dr. Frederick M. Brooks, Swetnam; vice-presidents, Drs. C. R. DuFour and Carlton L. Starkweather, Occoquan; secretary, Dr. Llewellyn Powell, Alexandria; corresponding secretary, Dr. Arthur G. Coumbe, Vienna, and treasurer, Dr. Edwin L. Detwiler, Herndon.

Personal.—Dr. Kenneth Bradford has been elected health officer of Staunton.——Dr. Truman A. Parker, Richmond, has been placed in charge of the new Catawba Sanatorium for Tuberculosis, in Roanoke County.——Drs. George J. Williams, Newport, Will R. Williams, Richlands, Lomax Gwathmey and Herbert N. Old, Norfolk, have sailed for Europe.——Dr. Henry Stuart MacLean has been appointed *chief surgeon for the* Virginia Railway and Power Co., and Dr. Francis W. Upshur, assistant, for Richmond and Manchester, and Dr. John G. Rennie has been appointed local surgeon at Petersburg.

WEST VIRGINIA

Antituberculosis Society Organized.—The Antituberculosis League of Parkersburg was organized August 2 with nonprofessional officers, but with Drs. Alfred N. Frame, Walter S. Link and O. Dustin Barker on the board of directors.

Personal.—Dr. W. Dewitt Stewart, city health officer of Moundsville and Dr. Charles W. Hudson, health officer of Parkersburg, have resigned.——The diploma of Dr. James F. York, Huntington, issued by the Eclectic Medical Institute, Cincinnati, June 4, 1895, has been stolen from his office.

Smallpox Prevented.—Dr. J. F. Scott, president of the board of health of Henry, reports a case of smallpox imported by an Italian immigrant, which by reason of prompt diagnosis and quarantine by Dr. R. M. Riley, was followed by no spread of the disease.

WISCONSIN

District Society Meeting.—At the sixth annual meeting of the Second Councilor District Medical Society, held in Kenosha, August 3, the following officers were elected: President, Dr. Samuel C. Bochan, Racine; secretary-treasurer, Dr. George W. Nott, Racine, and vice-presidents, the presidents of the affiliated county societies. The next meeting will be held in Racine.

Faculty Announced.—The Wisconsin College of Physicians and Surgeons, Milwaukee, announces that its first semester will open October 5, and the following faculty list is given: Dr. Wilbur O. Carrier, president; Dr. Thomas C. Phillips, dean; Dr. Solon Marks, emeritus professor of military surgery and of fractures and dislocations; Dr. A. Hamilton Levings, professor of surgery; Dr. Uranus O. B. Wingate, professor of nervous and mental diseases; Dr. William H. Washburn, professor of medicine; Dr. James A. Bach, professor of ophthalmology; Dr. Harry A. Sifton, professor of clinical surgery; Dr. Lorenzo Boorse, *professor of pediatrics*; Dr. Gustav A. Kletesch, professor of gynecology; Dr. Henry Blank, professor of orthopedic surgery; Dr. Thomas C. Phillips, dean of the faculty, professor of ophthalmology and otology; Dr. William Francis Becker, professor of mental and nervous diseases; Dr. Gustav A. Hipke, professor of obstetrics; Dr. Herman Reineking, professor of surgery; Dr. Henry B. Hitz, professor of rhinology and laryngology; Dr. Frank E. Darling, professor of bacteriology; Dr. Louis F. Rauschaupt, professor of chemistry; Dr. James D. Madison, professor of medicine; Dr. Curtis A. Evans, professor of anatomy; Dr. Emerson Armour Fletcher, professor of genitourinary surgery; Dr. George C. Ruhland, professor of pathology; Dr. Milton M. Spitz, professor of therapeutics; Dr. Otto H. Foerster, professor of dermatology; Dr. Wilmot F. Miller, professor of electrotherapeutics and associate in neurology; and Dr. Henry Hasson, professor of clinical microscopy.

GENERAL NEWS AND COMMENT

Railway Installs Paper Cups.—The Baltimore and Ohio Railway has installed one of the new systems of individual drinking cup machines at both Camden and Mt. Royal stations, Baltimore. The cups are made of white paraffin paper, and arranged in slot machines. By dropping a cent in the slot, a paper cup is dropped into the hand and becomes the property of the user.

Branch Federal Laboratory to be Established.—The Public Health and Marine-Hospital Service has taken steps looking to the establishment of a branch of its Federal Laboratory on the Pacific Coast in the zone of squirrel plague infection. This branch laboratory will have for its special purpose the elucidation of the various problems in connection with plague and rodents, work which can not safely be performed in laboratories in the great centers of population.

FOREIGN

Allegory in Sculptured Memorials to Scientists.—Several statues of prominent members of the profession in Europe have been installed recently as memorials at the scene of their labors, but the designs of the sculptors have all been ornately allegorical, and many criticisms have been made that this conflicts with the simplicity and love of absolute truth which distinguished the scientists thus honored. The Brouardel statue at Paris is a bust of the scientist on a tall pedestal with two graceful female figures below, Forensic Medicine and Hygiene, a little smaller in proportion than the bust, lifting high a garland to wreath it at the base of the bust. It stands in the grounds of the medical school. The Mikulicz memorial at the surgical clinic at Breslau represents in bas relief Mikulicz seated in profile, while two standing female figures, Medicine and Science, of a size rather dwarfing the recipient, are placing the wreath of immortality on his brow. One can not help imagining that Mikulicz feels.. [illegible] the situation. The Kussmaul memorial is [illegible] than life-size hewn out of the stone forming the base of the memorial, with a smaller allegorical bas relief below of Medicine relieving a sick youth. The allegorical design has run riot in the Virchow statue, which is to be merely a statue of Hercules overcoming the Nemean lion, representing Virchow's conquest of disease. There is nothing to suggest Virchow personally except a small bas relief bust below. Something like the simple grandeur and life-like presentation of a St. Gauden's statue of Lincoln is what the friends of the scientists long for as a much more appropriate tribute to the memory of men of science, perpetuating their personality, but the sculptors, as a rule, seem determined to insist on decorative allegorical designs.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug. 7, 1909.

Premature Burial

As stated in a previous letter the coroner's inquest of Great Britain, like many others of its institutions, is antiquated. A committee of the House of Commons is now considering the subject and the trite but ever-interesting subject of premature burial is one of the topics which came up. Mr. Pepper, of St. Mary's Hospital, the well-known medicolegal expert, gave evidence. He said that under the present condition of death certification there was practically no danger of any one being buried alive. Nearly all the cases of premature burial were myths. He regarded the present scare on the subject as baseless. A muscular movement of a corpse possibly was the basis of some of the reports. But he thought that no person ought to be buried until the corpse had been seen by a physician and no physician ought to give a certificate until he had seen the corpse. According to the present system a medical man may give a death certificate if he has never seen the corpse; all that is necessary is that he should have been in attendance during the last illness and seen the patient within a week of death.

Malaria Without the Anopheles Mosquito?

A despatch received from the governor of the Seychelles Archipelago—which lies about 750 miles northeast of Madagascar—appears to show that an epidemic of malaria is possible without the agency of the anopheles mosquito. In April, 1908, malaria broke out suddenly in Picard Island. The cases were of the benign tertian type mixed with a few isolated quotidian ones and occurred up to the end of August. Almost all the laborers in the settlement were attacked, but none died. The diagnosis was confirmed by microscopic examination of the blood which was performed by Dr. M. S. Power. Under quinin the epidemic soon subsided. It began soon after the arrival of a vessel from Manhigo, a French island off Madagascar, where malaria is prevalent. Some laborers suffering from malaria landed from the vessel and within a month the disease spread to others. Careful search for the anopheles was made but failed to reveal it. At first this was attributed to the season, as mosquitoes are scarce during the southeast monsoon. However, larvæ of the culex and stegomyia were found. Further search for the anopheles during and after the rainy season was made for five months, but it could not be found. The conclusion was drawn that it does not exist in Picard Island. Previous investigators have also recognized the absence of this mosquito from the Seychelles Islands and malaria has been unknown there excepting imported cases, but these were not known previously to have given rise to fresh cases. Two suggestions have been made. Perhaps under certain circumstances malaria may be conveyed by other mosquitoes than the anopheles. Perhaps the vessel in which the malarial laborers arrived may have carried some anopheles which went ashore and bit the inhabitants, but, the local conditions not being favorable to their existence, they disappeared.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Aug. 5, 1909.

Prize of the Academy of Sciences

The Academy of Sciences has just awarded three prizes of $500 (2,500 francs) each, one to Dr. Neumann for his researches on the family of the ixodidæ and on various groups of parasites of the superior vertebrates; one to Dr. Charles Nicolle for his works on infantile kala-azar; and one to Prof. J. Bergonié and Dr. L. Tribondeau of Bordeaux for their work on Roentgen rays and fulguration. In the same competition three second prizes of $300 (1,500 francs) each were awarded, one to Prof. H. True and Dr. P. Chavernac of Montpellier for their work on ocular hygiene and ophthalmologic inspection of schools; one to MM. C. Porcher and C. Hervieux for their "Investigations on Indol and Some of Its Derivatives;" and one to M. Moussu, professor at the National Veterinary School of Alfort, for his "Investigations on the Tuberculosis of Cattle." The Godard prize ($200) was awarded to Dr. Pousson, professor at the College of Medicine of Bordeaux, for his "Surgery of Nephritis." The Bellion prize ($280) was awarded to Dr. C. Nicolas, resident physician of Lifu, New Caledonia, for his work, "Public and Private Hygiene of the Kanakas of the Loyalty Islands." The Bréant prize ($20,000), offered for a cure for Asiatic cholera, was not awarded; but out of the accumulated interest of this fund the academy awarded a prize of $800 to W. M. Haffkine for his works on vaccination and bubonic plague, and a second prize of $200 to Dr. Louis Rénon, physician of the hospital of Paris, for his work entitled "Practical Treatment of Pulmonary Tuberculosis."

Personal

The chair of therapeutics of Bordeaux has just been replaced by a clinical department of cutaneous and syphilitic diseases, of which Dr. Dubreuilh, adjunct professor, has been appointed head. At the same college the chair of operative medicine has been replaced by a clinical department of diseases of the urinary passages, and Dr. Pousson, an adjunct professor, has been appointed as its head.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, July 29, 1909.

The First Provincial Institution for Tuberculosis

The first provincial institution for the treatment and prophylaxis of tuberculosis has just been founded in Göttingen, and has already proved to be a necessity, for in several places in the district tuberculosis is very prevalent. The clergy of the district have undertaken the local direction of the institution. Its objects are twofold: first, to eradicate the various foci of tuberculosis; and, second, to discover incipient cases of tuberculosis and to furnish institutional treatment to the patients. Sputum cups may be obtained for distribution. The washing of the patients is to have special treatment in laundry bags, the property of the institution. Strengthening foods (milk and eggs) are to be furnished in special cases. The effort will be made to see that tuberculous patients with sputum capable of conveying infection shall have separate sleeping-rooms or at least separate beds in their homes. The disinfection of the dwelling will also be done by the institution. The funds for the new institution have been raised and placed at the disposal of the local commission by the life insurance organization.

Investigation of the Influence of Roentgen Rays on Physical Growth

It has been established through animal experimentation that exposure to Roentgen rays impairs physical growth. To investigate the question how far these findings apply to human beings, this year's congress of the German Roentgen Society has decided on a collective inquiry. Children who have been treated with Roentgen rays during their first year, especiallly those whose treatment took place some time ago, are to be investigated, for it has been shown by animal experimentation that the disturbance in growth is greater the younger the animal, and also that a slighter degree of disturbance of growth may not manifest itself until after several years.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, July 30, 1909.

Death of Hofrath von Vogl

A few days ago August von Vogl, emeritus professor of pharmacology in Vienna, died at Bozen in his seventy-sixth year. The remarkable personality of this scientist is well known, as he was the originator and founder of the modern pharmacognosy; he was the first man to apply the researches of histology and the use of the microscope to this branch of medicine; and his pupils are scattered all over the world. Von Vogl obtained the degree of M.D. in 1860, being the first man in Austria to obtain it. (Formerly only surgeons or physicians or "accoucheurs" (masters of obstetrics) were entitled to practice, each one his own specialty.) Von Vogl soon took up the study of pharmacology and materia medica, became privat docent and a short time afterward professor of this branch, and in 1879 he was appointed ordinary professor of materia medica in Vienna. In 1897 he became president of the *Oberste Sanitätsrat* (chief board of health in this country). He was elected twice as "rector magnificus" of the Vienna University, and was appointed by the emperor as Hofrath (privy councilor), and finally ennobled. When he retired from university life at 70, his duties were divided among his pupil and successor, Prof. Hans Horst-Meyer, and Professors Schattenfroh and Mitlacher; such was the enormous amount of work accomplished by this one man. The chief books of the deceased are a text-book on materia medica (translated into seven languages), an anatomic atlas of pharmacognosy (a commentary on the pharmacopeia of different countries), and a work on the adulteration of food, especially of flour, condiments and fruits. Among other distinctions he possessed the English Hanbury medal. von Vogl sometimes used to say he had examined more than 50,000 specimens under the microscope. He was a severe but kind examiner of the students, and none bore him a grudge.

Correspondence

Dr. Harvey Cushing's Oration on the Hypophysis Cerebri

To the Editor:—Those who expressed surprise when, over six years ago ("Internal Secretions," 1st Ed., 1903), I asserted that the anterior lobe of the pituitary played a leading rôle in the vital process *per se*, must now acknowledge the far-reaching meaning of Dr. Cushing's statement, in the Oration on Surgery, published in The Journal, July 24, that "more than one hundred total or partial hypophysectomies" had shown that "the anterior lobe of the hypophysis is a structure of such importance that a condition of apituitarism is incompatible with the long maintenance of life." While fully acknowledging the great value of Dr. Cushing's experiments, however, I must take exception to his conclusion that they sustain the theory that it is by means of a secretion capable of influencing the organism at large that the anterior pituitary carries on these all-important functions.

That extracts of the posterior lobe raise the blood pressure, slow the heart and promote diuresis, is certain, but I maintain that these effects are not produced by a true secretion, but by a mere component of the organ similar to that which, in extracts of the kidney, testis, ovary, etc., produces identical effects. As I have shown recently (*Monthly Cyclopedia*, June and July, 1909), these effects are those of adrenal extracts, and have long misled observers into believing that these various organs produced internal secretions (See "True *versus* Pseudotherapy," in a forthcoming number of the *New York Medical Journal*). Additional, but as yet unpublished, researches have suggested, moreover, that this was due to the presence in the pituitary, as well as in all the above-mentioned organs, of cellular elements, the so-called "adrenal rests" (not aberrant cells from my viewpoint, but activators of local metabolism), which are well known to give rise, especially in the kidney, to hypernephroma. Dr. Cushing, in fact, compares the action of the so-called pituitary secretion to that of adrenalin.

Again, although Herring's view that the colloid fluid (laden with broken-down cells, let me add) passes upward is quite warranted, this does not prove in the least that it is a true secretion. Indeed, Dr. Cushing's own text suggests the contrary. Since the blood pressure raising substance is "confined, as Howell has proved, to the posterior lobe," why is it that, as Dr. Cushing says, "after this portion of the gland has been removed, there is no apparent disturbance with the physiologic balance of the body?" Everyone knows that removal of the adrenals or of the thyroid, which produce true secretions, causes marked and even fatal disturbances. Again, the anterior pituitary is regarded by Dr. Cushing as the original source of this secretion; why is it that its extracts are inert? Can we consistently, with him, ascribe acromegaly, overgrowth, etc., to "hypersecretion," and dystrophia adiposogenitalis, Dercum's adiposis dolorosa, etc., to "hyposecretion" of this inert substance? These are but few of the many directions in which the secretion theory blocks all progress.

Permit me to state that such is not the case when the functions I have ascribed to the pituitary, after a far more searching study than has ever been given it by physiologists, are taken into account. The anterior lobe (including its nerve cells) from this viewpoint is connected with the floor of the third ventricle (Ramon y Cajal, Genti's) and the pons (Andriezen) by nerves which can be traced, both physiologically and clinically, to the adrenals and thyroid, while the secretions of these organs, as I have shown by many incontrovertible facts, are active factors in oxidation, metabolism and nutrition. Under these conditions it is plain that any morbid activity of the anterior pituitary, whether caused by hyperemia, hypertrophy, tumor, etc., must, by exciting unduly the adrenals and thyroid, cause excessive nutrition, overgrowth, and even giantism. Have we not the giantism of childhood in adrenal hypernephroma and rapid growth in the cretin under thyroid extract? Conversely, destructive or debilitating disorders of the anterior pituitary, by lowering the activity of the adrenals and thyroid, must necessarily entail small stature with deposition of fat and adiposis dolorosa. Do we not use thyroid extract in obesity? Do we not witness also, as symptoms of degeneration of the pituitary, myxedema, lowered oxidation, hypothermia and bronzing? Page after page of perplexing queries could be submitted attesting pointedly to the fact an imported doctrine is not always invulnerable.

All this does not militate in the least against Dr. Cushing's researches or the correctness of his surgical conclusions. His experimental and surgical work is entitled to the greatest appreciation; but it is precisely because I value his work so highly that I would like to see it devoted to the development of something besides mere assumptions.

C. E. de M. Sajous, Philadelphia.

High Enemas—Can a Tube Be Passed Into the Colon?

To the Editor:—In connection with Dr. Horace W. Soper's paper on page 426, and your editorial on page 464 of The Journal, August 7, I wish to express my appreciation of Dr. Soper's ingenuity and industry, displayed in the scanning of foreign literature. From page 48 of the third edition of Jacobi's "Therapeutics of Infancy and Childhood," I beg to quote as follows: "The great normal length of the sigmoid flexure in the infant and child, which results in its being bent on itself, prevents the introduction of an instrument to a considerable height. It will bend on itself." On page 343 one may read: "The condition of the sigmoid flexure renders the introduction of the instrument beyond the very beginning of the sigmoid flexure, a perfect illusion in many cases. It often happens that an elastic or flexible tube, when introduced to or beyond the third sphincter, bends on itself and reappears at the anus. To facilitate the entrance of the liquid into and beyond the sigmoid flexure, the irrigation should be made slowly and gently, while the pelvis of the infant is raised. The nozzle must be smooth and not thin." Similar statements are found in Jacobi's "Intestinal Diseases of Infancy and Childhood," 1887. The abnormal length and flexures of the sigmoid colon which lend to what Jacobi has called "Congenital Constipation," were first described by him in 1869.

In an article on "Congenital Constipation," which appeared in the Transactions of the American Pediatric Society, vol. vi, page 41 (1894) I wrote as follows: "The article by Jacobi, 'Some Important Causes of Constipation in Infants' is classical, and though it appeared in 1869 (*Am. Jour. Obstet.*, vol. ii), it will repay careful reading and study at the present time." During the twenty-five years of my college assistantship, Dr. Jacobi has annually referred to the difficulty or impossibility of passing elastic or solid tubes through the sigmoid flexure. When felt below the liver, the instrument is not in the transverse colon, but in the sigmoid, which has simply been raised to an abnormal position.

Francis Huber, M.D., New York City.

To the Editor:—Having observed in The Journal of Aug. 7, 1909, the article by Horace W. Soper, M.D., of St. Louis, I wish to call attention to the enclosed extracts from a paper read by me before the American Proctologic Society in June, 1904, entitled, "The Present Status of the Flexible Rectal Tube, Which Should be Paraphrased Non-utility and Impracticability." I make this request in order that the society may be placed in a proper light before the profession, as having taken the initiative in this matter.

> "The members of our society generally have definitely accepted the existence and functions of Houston's rectal valves, we have dilated on their pathologic conditions, but have not reflected what effect they must have on the use of the flexible rectal tube. . . . I venture to assert, that notwithstanding all of our boasted knowledge with regard to these valves, that it is the universal practice with rectal specialists, when ordering or giving a high enema, to use the long rectal flexible tube.
>
> "It occurred to me that if the pathologic function of these valves is to shelve and ease down the fecal matter, and if in a pathologic condition they could become so thickened as to form an obstruction to the passage of the fecal matter, that they must interfere materially with the passage of the rectal tube beyond them. I therefore instituted a series of experiments with the soft rubber tubes, to ascertain the true state of affairs. In a number of instances I introduced the rectal tube, then passed in Tuttle's proctoscope over it, and on turning on the electric light, I found, as I had expected, *the rectal tube coiled on itself in the lower portion* of the rectum, between the first valve and the anal margin. I have not yet found a single exception to this condition, although, I am willing to admit that occasionally it may pass them. This I should regard more as an accident, than an intended result. . . .
>
> "*But why should we depend on such uncertain means, and one* attended with so much difficulty in its use, when we always have one, that is so much easier and certain to accomplish the purpose. I refer to the application of the physical law of gravity. A patient should be placed in the knee-chest position, or if too weak, in Sims' position, with the head and shoulders lowered, and the hips elevated with a pillow. The high enema can be given in this position with the most satisfactory results, using a short rectal nozzle. Even in cases of impaction, the water so introduced can be made to distend the bowel, and get beyond the point of obstruction, by sufficiently elevating the bag. By using a large quantity of water, it can be made to run around as far as the ascending colon."

Samuel T. Earle, M.D., Baltimore.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HISTORY OF THE LEUCOCYTE MIGRATION

To the Editor:—Who first saw the emigration of leucocytes through the capillaries, or stated that the polymorphonuclear cells of inflammatory exudates were emigrated from the blood-vessels? *Ludwig F. Guldner*, Davenport, Iowa.

Answer.—Adami, in his monograph on "Inflammation" (Macmillan and Co., 1907) gives the history of this discovery as follows: "By his researches, Cohnheim (1867) forcibly attracted the attention of pathologists to the diapedesis of leucocytes in inflammation —a process which had already been very clearly described years before by W. Addison (1843) and Waller (1846) in England, and yet earlier (though without grasp of the connection between the diapedesis and inflammation) by Dutrochet (1828) in France."

FLECHSIG TREATMENT OF EPILEPSY

To the Editor:—In The Journal, August 7, page 494, is a paragraph in which is mentioned the Flechsig opium-bromid and baths method of treatment. Please give the details.

J. H. Reed, M.D., Sharon, Pa.

Answer.—We have received several similar letters asking for details of this method of treatment, concerning the merits of which the various authorities on nervous and mental diseases disagree. The treatment is practically abandoned now, on account of the little benefit obtained in comparison with the dangers run. The Flechsig method is to administer opium for a short time in enormous doses, then to stop it abruptly and follow with large doses of bromids. Ordinary pulveris opii is administered in ascending doses up to 0.3 gm. (5 gr.) three times a day, the maximum quantity being reached as soon after the beginning of the administration as possible. The patient is kept on this maximum dose for six weeks; at the end of that time the opium is stopped abruptly and bromid of potassium or sodium to the quantity of 2 drams daily is given. After a few weeks, varying according to the evidences of bromism produced, the quantity is reduced one-half, and later may be diminished to 30 or 40 grains, and in some cases even less than this in the twenty-four hours. The opium is regarded as a preparation for the bromid treatment. Flechsig warns that the patient should be watched throughout the course of opium administration as one suffering from an acute disease.

H. A. Hare in the 1907 edition of his "Practical Therapeutics" states that the frequency and severity of the fits are materially reduced in this way for several months in some cases but that it does not cause a cure. It succeeds best in old cases and is not useful in recent ones. In the 1901 edition of his "System of Practical Therapeutics" he says: "After a year or two, if the attacks are not kept in abeyance, the opium may be repeated. I have yet to see any detrimental results or sequences of employing this method."

Gowers in his work, "Epilepsy," 1901, asserts that he regards it as doubtful whether the subsequent administration of bromid in such large doses has more influence than it would have without the preceding course of opium. The benefit sometimes seen in old obstinate cases of epilepsy, he says, may be explained by the large doses of bromid administered after a period of freedom from its influence.

Oppenheim, in "Diseases of the Nervous System," 1900, p. 783, says: "On the whole, the results of this treatment are very doubtful, and, in addition, it is not harmless, does not suit those of weakened constitutions, and demands careful watching, and is therefore probably only practicable in a hospital."

Starr, in "Nervous Diseases, Organic and Functional," 1907, p. 755, says: "I have not had good results from this course of treatment. I have known the opium habit to be induced. It is a method which is falling into disrepute. Opium and morphin should be avoided in epileptics."

Mettler, in "Diseases of the Nervous System," 1905, p. 220, says: "The plan is of doubtful efficacy and its dangers are not insignificant. In my own experience, though limited, it was not superior to the use of the bromids alone."

Spratling, in "Epilepsy," 1904, p. 374, states: "Flechsig recommended this treatment only in chronic cases in which the bromids alone had failed and cautions that the patient be carefully watched during the whole course of treatment. In my experience the plan was of little use. . . . The verdict of those who have tried the method is almost uniformly unfavorable, including Donath, Bohme, Landois, Luske, Rathe, Homen, Lichen, Warda, and Bratz."

The Public Service

Medical Department of the Army

Memorandum of changes for week ended August 14, 1909:

Skinner, G. A., major, ordered to Ft. Lawton, Wash., for duty on arrival from San Francisco.

Reynolds, C. R., major, relieved from duty at the Walter Reed General Hospital, Washington, D. C., and ordered to Washington, D. C. for duty.

Shepard, J. L., capt., ordered to duty with militia field exercises, Massachusetts coast, August 14 to 21.

Hartnett, E. H., major, granted leave of absence for 10 days.

Glennan, J. D., major, O'Connor, R. P., capt., Brechemin, Louis, Jr., capt., and Smith, H. M., capt., relieved from duty in the Philippines Division in time to sail Nov. 15, 1909, from Manila, P. I., for San Francisco, Cal.

Baker, F. C., major, ordered to Governor's Island, N. Y., for duty during the maneuvers in Massachusetts, August 14 to 21.

Juenemann, G. F., capt., relieved from duty at Fort McDowell, Cal., and ordered to Fort Logan, Colo., for duty.

Wickline, W. A., capt., ordered to accompany troops from San Francisco, Cal., to Washington Barracks, D. C.

Suggs, Frank, M. R. C., ordered from Fort Niagara, N. Y., to Fort Porter, N. Y., for temporary duty.

Brown, W. E., M. R. C., granted sick leave of absence for six months.

Jackson, T. W., M. R. C., when relieved at Washington Barracks, D. C., ordered to Fort Hunt, Va., for duty.

Hart, J. W., M. R. C., when relieved at Fort Hunt, Va., ordered to Henry Barracks, Cayey, P. R., for duty.

Wallace, G. I., M. R. C., when relieved at Henry Barracks, Cayey, P. R., ordered to Fort Sam Houston, Texas, for duty.

Coffin, H. L., M. R. C., relieved from duty on the transport *Burnside*, and ordered to Vancouver Barracks, Wash., for duty.

Eber, A. H., M. R. C., granted sick leave of absence for 2 weeks.

Usher, F. M. C., major, granted leave of absence to and including Sept. 1, 1909.

Wertenbaker, C. I., M. R. C., relieved from duty at Fort Wadsworth, N. Y., and from temporary duty at Fort Terry, N. Y., to take effect on the arrival at the latter post of Major Chandler P. Robbins, M. C., and will then proceed to Fort Jay, N. Y., for duty, relieving Capt. S. J. Morris, M.C., who on being relieved will return to his proper station, Fort Washington, Md.

Clarke, J. T., and Bratton, T. S., majors, relieved from duty as members of the board of medical officers, appointed to meet at Fort Crook, Neb., and Fort Des Moines, Iowa, respectively, for the purpose of conducting examinations of applicants for appointment to the Medical Reserve Corps.

Wells, F. M., M. R. C., ordered to Fort Leavenworth, Kan., for duty with troops to be ordered to Des Moines, Iowa.

Church, J. R., major, left Fort Robinson, Neb., with troops on practice march.

Smith, A. M., major, ordered to Presidio of Monterey, Cal., for duty.

Gunckel, G. I., dental surgeon, ordered to Fort Oglethorpe, Ga., for one month.

Medical Corps of the Navy

Changes for the week ended August 14, 1909:

Rodman, S. S., commissioned surgeon, with rank of lieut. commander, from Dec. 11, 1908.

Peck, A. E., commissioned surgeon, with rank of lieut. com-
mander, from June 12, 1909.

Smith, C. G., commissioned surgeon, with rank of lieut. commander, from July 1, 1909.

Brooks, F. H., commissioned P. A. surgeon, from July 14, 1908.

Reed, E. U., commissioned P. A. surgeon, from Sept. 21, 1908.

Woods, E. L., commissioned P. A. surgeon, from Oct. 14, 1908.

Robertson, Gardner E., appointed acting asst.-surgeon, from Aug. 5, 1909.

Clark, G. F., orders of July 23, modified; ordered to duty at the Naval Hospital, Washington, D. C.

Robnett, A. H., commissioned P. A. surgeon, from March 24, 1909.

McDonald, P. E., P. A. surgeon, unexpired leave revolked; detached from the Naval Hospital, New York, N. Y., and ordered to the Naval Academy, Annapolis, Md.

Dean, F. W. S., detached from the *Maine* and ordered to the *Prairie*.

Seaman, W., P. A. surgeon, detached from the *Prairie* and ordered home to await orders.

Wilson, H. D., surgeon, detached from the *Kearsarge* and ordered to continue other duties.

McCormick, A. M. D., surgeon, detached from the *Maine* and ordered home to await orders.

Reed, E. U., P. A. surgeon, detached from the Naval Recruiting Station, Chattanooga, Tenn., and ordered to the Naval Recruiting Station, Nashville, Tenn.

Donelson, M., asst.-surgeon, detached from the Naval Recruiting Station, Oklahoma City, Okla., and ordered to the Naval Recruiting Station, Chattanooga, Tenn.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Aug. 11, 1909.

Pettus, W. J., Asst. Surgeon-General, granted 27 days' leave of absence from August 16, 1909.

Gassaway, James M., surgeon, bureau order of July 20, 1909, amended to read on being relieved by P. A. Surgeon M. J. White, directed to proceed to San Francisco, and assume command.

Mead, F. W., surgeon, granted 1 month's leave of absence from Aug. 27, 1909.

McIntosh, W. P., surgeon, granted 21 days' leave of absence from Sept. 1, 1909.

Guiteras, G. M., surgeon, directed to proceed to Savannah Quarantine Station for temporary duty.

White, M. J., P. A. surgeon, directed to proceed to Philadelphia, Pa., and assume temporary charge pending arrival of Surgeon H. R. Carter.

Ramus, Carl, P. A. surgeon, on arrival of Asst.-Surgeon R. A. Herring, directed to proceed to Honolulu, Hawaii, and report to the chief quarantine officer for marine hospital duty.

Ramus, Carl, P. A. surgeon, granted 7 days' leave of absence *en route* to station.

Moore, Dunlop, P. A. surgeon, relieved from duty at Honolulu, Hawaii, and assigned to duty at Yokohama, Japan.

Trotter, F. E., P. A. surgeon, leave granted July 8, 1909, for 15 days from July 21, 1909, revoked.

de Valin, Hugh, asst.-surgeon, on the arrival of Surgeon G. M. Guiteras, directed to proceed to Stapleton, N. Y., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of Passed Assistant Surgeon.

Guthrie, M. C., asst.-surgeon, directed to proceed to Stapleton, N. Y., and report to chairman of board of medical examiners to determine his fitness for promotion to the grade of Passed Assistant Surgeon.

Atilles, Pedro del Valle, acting asst.-surgeon, granted 30 days' leave of absence from Sept. 1, 1909, with pay, and 15 days' leave from Oct. 1, 1909, without pay.

Duffy, Francis, acting asst.-surgeon, granted 6 days' leave of absence from Aug. 10, 1909.

Dynan, N. J., acting asst.-surgeon, granted 2 days' leave of absence from July 1, 1909, and 1 day, July 24, 1909, under paragraph 210, Service Regulations.

Goldsborough, B. W., acting asst.-surgeon, granted 3 days' leave of absence from July 31, 1909, without pay.

Harkin, F. McD., acting asst.-surgeon, granted 10 days' leave of absence from Aug. 10, 1909.

Rowles, J. A., acting asst.-surgeon, granted 25 days' leave of absence from Aug. 7, 1909.

Savage, W. L., acting asst.-surgeon, granted 30 days' leave of absence from Aug. 6, 1909.

Stevenson, J. W., acting asst.-surgeon, granted 12 days' leave of absence from Aug. 17, 1909, with pay, and a further period of 30 days' leave, without pay.

Thornton, M. J., acting asst.-surgeon, granted 4 days' leave of absence, July 8, 10, 11 and 12, 1909, under paragraph 210, Service Regulations.

BOARD CONVENED

Board of medical officers convened to meet at the marine hospital, Stapleton, N. Y., Aug. 30, 1909, for the examination of Asst.-Surgeons Hugh de Valin and M. C. Guthrie, to determine their fitness for promotion to the grade of Passed Assistant Surgeon. Detail for the board: Surgeon L. L. Williams, chairman; P. A. Surgeon John McMullen; P. A. Surgeon C. W. Vogel, recorder.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended August 13, 1909:

SMALLPOX—UNITED STATES

Illinois: Danville, July 25-Aug. 1, 2 cases; Moline, July 24-31, 1 case.
Indiana: Fort Wayne, June 19-26, 7 cases. July 3-10, 4 cases, July 17-31, 34 cases.
Kansas: Wichita, July 10-17, 1 case, July 24-31, 2 cases.
Kentucky: Lexington, July 10-17, 3 cases, July 24-31, 1 case; Newport, July 19-26, 1 case.
Michigan: Saginaw, July 24-31, 1 case.
Minnesota: Duluth, July 23-30, 4 cases
Missouri: St. Joseph, July 3-24, 15 cases.
Pennsylvania: Philadelphia, July 17-24, 3 cases.
Texas: Fort Worth, July 1-31, 1 case; San Antonio, July 24-31, 1 case.
Wisconsin: Appleton, July 17-31, 17 cases.

SMALLPOX—FOREIGN

Africa: Tripoli, June 19-July 10, 17 cases, 1 death..
China: Hongkong, May 29-June 19, 2 cases, 2 deaths; Tientsin, June 26-July 3, 1 case, 2 deaths.
France: Paris, June 26-July 10, 5 cases.
Indo-China: Saigon, June 19-26, 2 cases, 2 deaths.
Italy: General, July 11-18, 32 cases; Naples, 16 cases, 3 deaths.
Java: Batavia, June 16-July 3, 3 cases.
Portugal: Lisbon, July 17-24, 2 cases.
Russia: Moscow, June 26-July 10, 47 cases, 2 deaths; Odessa, July 3-17, 2 cases; Riga, July 10-17, 6 cases.
Spain: Barcelona, July 12-19, 4 deaths; Valencia, June 26-July 10, 12 cases, 1 death; Vigo, July 10-17, 1 death.
Turkey in Aisa: Mercine, vicinity, July 19, epidemic.
Turkey in Europe: Constantinople, July 4-11, 1 death.

YELLOW FEVER

Brazil: Manos, June 26-July 3, 1 death; Para, June 26-July 10, 12 cases, 12 deaths.

CHOLERA—FOREIGN

Indo-China: Saigon, June 12-26, 7 cases, 6 deaths.
Russia: General, July 17-23, 164 cases, 73 deaths; St. Petersburg, 526 cases, 234 deaths.

PLAGUE

Australia: New South Wales, Sydney, May 22-29, 2 cases, 1 death; Queensland, Mackay, June 6, 1 death.
China: Canton, June 12-26, 70 cases, 50 deaths; Hongkong, May 29-June 19, 33 cases, 32 deaths.
India: General, June 19-26, 628 cases, 531 deaths.
Indo-China: Saigon, June 12-26, 8 cases, 5 deaths.
Japan: Kobe, July 3-10, 2 cases, 1 death; Osaka, July 2, 1 case, 1 death.
Trinidad: June 19-July 3, 2 cases, 2 deaths, July 18, 1 case, 1 death.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Iowa: State House, Des Moines, September 21-23. Sec., Dr. Louis A. Thomas.

Missouri: Kansas City, September 20-22. Sec., Dr. J. A. B. Adcock, Warrensburg.

New York: Albany, September 21-24. Chief of Examinations Division, Charles F. Wheelock, Albany.

Massachusetts: State House, Boston, September 14-16. Sec., Dr. Edwin B. Harvey.

Colorado Requires Practical Examinations

Dr. S. D. VanMeter, secretary of the Colorado State Board of Medical Examiners, reports that practical tests are required by that board in the examinations for license to practice in Colorado. These practical tests are in (a) regional anatomy, making use of a living subject; (b) chemistry, particularly the making of a urinalysis; (c) pathology, consisting in the recognition of diseases by the examination of gross and microscopic specimens and (d) symptomatology, or physical diagnosis.

At least four state boards require practical tests in their examinations for license—Colorado, Massachusetts, Ohio and Minnesota. These practical tests form one of the best means of differentiating between graduates of a didactic or quiz-compend college and those who have received a thorough training in laboratory and clinic.

Nebraska State Board Controversy

The newly appointed board of secretaries of the Nebraska State Board of Health is as follows: President, C. P. Fall, M.D., Beatrice; vice-president, H. B. Cummings, M.D., Seward; treasurer, A. L. Muirhead, M.D., Omaha, and secretary, E. Arthur Carr, M.D., Lincoln.

The appointment of this board is being contested by the former board, it is reported, on the ground that, since the legislature repealed the wrong clause in the section of the act referring to the appointment of the state health inspector, and since this act also covers the appointment of the board of secretaries, the entire act was thereby made null and void.

The new board is, of course, the one recognized by the State Board of Health proper, which consists of the governor, the attorney general and the superintendent of public instruction. Mail addressed to the State Board of Health has been opened by the new board following the receipt of a favorable decision by P. V. Keyser, the acting assistant attorney general of the Postoffice Department at Washington. The whole matter will probably be tried in the courts within a short time.

New Officers of the Wisconsin Board

The newly elected officers of the Wisconsin State Board of Medical Examiners are: president, Dr. A. B. Bailey, Fennimore; secretary, Dr. John M. Beffel, Milwaukee.

Idaho April Report

Dr. W. F. Howard, secretary of the State Board of Medical Examiners, reports the written examination held at Boise, April 7-8, 1909. The number of subjects examined in was 11; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 33, of whom 27 passed and 6 failed. The follov'ing colleges were represented:

College.	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, Chicago	(1885)	77
Rush Medical College (1896) 82.4;	(1904)	84.8, 90.1
Chicago College of Medicine and Surgery	(1908)	80.2
dical School	(1904)	80
	(1898)	76.8
of Med. (1905) 82;	(1908)	80.8, 85.1
	(1900)	75.3
(1892) 85.1;	(1896)	78.4
(1901) 81.9;	(1905)	75
ota	(1907)	81.8
	(1905)	75.7
lege	(1908)	76.8
ge	(1908)	82
llege	(1906)	79.6
ical College	(1898)	77.5
arolina	(1906)	86.5
o (1882) 78.3;	(1889)	77.7
lege	(1908)	78.7
, Ontario (1888) 78.7;	(1907)	85.7
FAILED		
lege and Hospital, Chicago	(1909)	65.1
dicine and Surgery	(1895)	61
	(1905)	53.1
(1907) 69.4;	(1908)	72.3
Chattanooga Medical College	(1903)	69.6

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Life Insurance Companies Working for Better Health Conditions

Following the announcement by Prof. J. Pease Norton of the Committee of One Hundred, that the Metropolitan Life Insurance Company of New York City is beginning a systematic campaign against tuberculosis among its policy holders, comes the announcement of the Provident Savings Life Assurance Society of New York that a bureau has been established in the medical department of the society to assist in guarding the health of policy holders and to be known as the Policy Holders' Health Bureau. The object of the bureau is to increase mortality savings by helping policy holders to prevent disease and to discover disease in time to check or cure it. This assistance is to be offered to policy holders without charge, through the medium of health bulletins, correspondence and free medical examination, at the expense of the company, every two years, of such policy holders as may desire it. After emphasizing the needless waste from illness among the general population, the president of the society states that it is not only the right but the duty of the society to use, within proper limits, the facilities at its command to protect the policy holders from needless suffering and loss of life, and that the results of such a work will soon return the relatively small cost of operating the bureau. It is proposed to issue health bulletins from time to time, giving the policy holders the benefit of recent discoveries and advances in medical knowledge, also to aid them in discovering symptoms of disease in time to effect a cure or to arrest its progress. The society will not, of course, undertake to provide medical treatment for policy holders, such services should be rendered by the local or family physician in each case, but will endeavor to discover disease in time to prevent serious results therefrom. To this end, periodical medical examination by the physicians of the society will be given every two years.

Professor Norton states that the inauguration by the great insurance companies of a general sanitary campaign, is in his judgment, the most important event in the history of life-insurance in fifty years. Obviously, the adoption of such a policy by a few of the insurance companies will eventually lead to its adoption by all, since the advantages to the policy holder of such a plan are apparent. It will only be necessary for the medical profession to demonstrate the material advantages of good health and the wastefulness of disease and sickness, to inaugurate an effective campaign against preventable disease.

British Medical Association Warns Prospective Medical Students

In a recent issue of the *British Medical Journal* containing the transactions of some of the branches of the British Medical Association, is an especially interesting circular, issued by the Salford Division and submitted to the council of the association with a view to securing its circulation in the public schools. The council as yet has taken no action on the matter, but transmits the circular to the representative meeting for consideration. The circular is of interest, as showing the economic conditions existing in the medical profession in Great Britain. After stating that the increase in the number of medical students in the last year shows the ignorance on the part of parents of the present economic crisis in the profession of medicine, the circular states:

"In general practice, to which nine-tenths of the entrants are destined, the field of work, and therefore the income, has been contracted and is bound to contract as disease becomes more and more preventable. A single instance of it: Dr. Davy, in his presidential address to the British Medical Association said: 'My predecessor told me that fifty years ago his average income from attendance on cases of typhoid was £300 ($1,500) a year. For the past few years my income from that source has hardly averaged five guineas.'"

The *British Medical Journal* says: "The average income of the practitioner has been estimated at from £200 to £250 a year. The chances of being able to save even to the extent of the capital expended in education are, in a large proportion of cases, slight, while reasonable provision for old age, after family expenses are met, is difficult and often impossible. This after a training lasting seven years and costing from £1,000 to £1,200 ($5,000 to $6,000), and even this pittance is only gained by working seven days a week and being on duty twenty-four hours a day, with the natural result that the death rate in the medical profession is higher than in any other, the army excepted.

"In France and Germany it has been found needful to issue letters of warning to intending students, as the results of practice are equally unsatisfactory there.

"We would, therefore, ask you to urge intending entrants to inquire further before joining so overcrowded a profession."

Marriages

HERMAN A. WHITE, M.D., to Miss Nellie Phelps, both of Clinton, Iowa, August 5.

ROBERT SLOAN IRWIN, M.D., to Miss Nora Elizabeth Hawver, both of Denver, July 14.

CALEB N. ATHEY, M.D., Baltimore, to Miss Helen Skipwith Wilmer, at Baltimore, August 2.

WALTER H. DARLING, M.D., Minneapolis, Minn., to Miss Florence Girard, of Boston, July 4.

JOSEPH E. POWLEY, M.D., to Miss Caroline Robertson, both of Altoona, Pa., at Philadelphia, July 29.

JOHN P. YOUNG, M.D., Richburg, S. C., to Miss Constance Witherspoon, of Lancaster, S. C., June 23.

LOIZA ELWELL, M.D., Battle Creek, Mich., and Philip Johnstone, of Belfast, Ireland, at Detroit, July 31.

WILLIAM E. SUNDERLAND, M.D., Estancia N. M., to Miss Hazel F. Rietz, of East Dubuque, Ill., at Santa Fe, N. M., August 4.

Deaths

Sarah Hackett Stevenson, M.D. Northwestern University Woman's Medical School, Chicago, 1874; a member of the American Medical Association till her enforced retirement through illness; who has been an inmate of St. Elizabeth's Hospital since 1906; died at that institution from paralysis, after an illness of three years, August 14, aged 64.

Dr. Stevenson was one of the first women in America to take up the study of medicine and to practice the profession, and had a hard fight in overcoming the early prejudices against her sex. As a club woman and philanthropist, Dr. Stevenson was well known; she was a member of many prominent women's clubs, among which were the Chicago Woman's Club and the Twentieth Century and Fortnightly clubs. She was instrumental in founding several well-known institutions, among them being the Chicago Maternity Hospital and Training School for Nursey Maids, and the Illinois Training School for Nurses.

At various times she had held important public positions, having been a member of the Illinois State Board of Health and professor of obstetrics at the Woman's Medical College, her alma mater. She had been attending gynecologist to Cook County Hospital; and was on the attending staffs of the Mary Thompson, Frances Willard and Maternity Hospitals.

Sarah Hackett Stevenson

Ignatius Donnelly, M.D. Jefferson Medical College, Philadelphia, 1883; formerly secretary of the Minnesota State Medical Society; a member of the staff of the City and County Hospital and St. Joseph's Hospital, St. Paul; a specialist on diseases of the nose, throat and ear; for many years a member of the American Medical Association; who went to Butte, Mont., two years ago to gain relief from heart disease, died July 31, in St. Mary's Hospital, Minneapolis, from heart disease. aged 51.

Matthew Turner Newton, M.D. Yale University, New Haven, Conn., 1851; in 1853 a member of the legislature from Salem, Conn.; assistant surgeon of the Third, and later surgeon of the Tenth Connecticut Volunteer Infantry during the Civil War; a member of the legislature from Suffield in 1893; president of the Suffield (Conn.) Savings Bank for twelve years; died at his home, July 24, from senile debility, aged 80.

Pliny Brett Morgan, M.D. Pulte Medical College, Cincinnati, 1881; of Berkeley, Cal.; a specialist on tuberculosis; and for many years professor of physical diagnosis and diseases of the lungs in Hahnemann Medical College, San Francisco; died at the home of his son in Ben Lomond, Cal., July 29, from heart disease, aged more than 70.

Jacob Moyer Hagesy, M.D. Rush Medical College, Chicago, 1862; for many years a member of the American Medical Association; once president of the Livingston County, Ill., Medical Society; a member of the American Public Health Association, died at his home in Mount Morris, N. Y., August 3, from cerebral hemorrhage, aged 76.

Erskine Boies Fullerton, M.D. Starling Medical College, Columbus, 1866; of Columbus, Ohio; a member of the American Medical Association; for many years professor of materia medica and therapeutics in Starling Medical College; died suddenly in the Good Samaritan Hospital, Portland, Ore., July 31, from cholera morbus, aged 66.

Francis Everard Roche, M.D. Queen's University, Dublin, Ireland, 1867; formerly surgeon major, British reserve military forces; a fellow of the Pathological Society, London; a member of the British Medical Association, and Utah State Medical Association; died at his home in Ogden, Utah, July 31, from septicemia, aged 67.

James A. Pinson, M.D. Medical College of Indiana, Indianapolis, 1872; an honorary member of the Vigo County (Ind.) Medical Society; a veteran of the Civil War; and a member of the local board of U. S. pension examining surgeons; died at his home in Terre Haute, June 22, from senile debility, aged 73.

George Mays, M.D. University of Pennsylvania, Philadelphia, 1861; a member and once president of the Philadelphia Medico-Legal Society; assistant surgeon and surgeon to the Ninety-third Pennsylvania Volunteer Infantry during the Civil War; died at his home in Philadelphia, August 1, aged 63.

Joseph W. Southall, Medical College of Virginia, Richmond, 1860; formerly superintendent of Public Instruction of Virginia; a Confederate veteran; for eight years a member of the state senate; died at his home near Jetersville, August 2, from cholera morbus, aged 77.

Cranston H. Dodd (license, Iowa, 1886); formerly postmaster of Koszta, Iowa, and coroner and justice of the peace of Iowa County; died in a hospital in Iowa City, August 2, from hemorrhage following an operation for pancreatic cyst, aged 62.

Roscoe Arthur Nash, M.D. State University of Iowa, Iowa City, 1894; formerly a member of the American Medical Association; for many years house surgeon at Mercy Hospital, Tipton; died at his home in Tipton, Iowa, August 1, from tuberculosis, aged 42.

Susanna Hayhurst, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1857; of Philadelphia; who had been connected with the Woman's Hospital of Philadelphia for thirty-three years, died in that institution, August 7, from senile debility, aged 89.

William C. Doane, M.D. Castleton (Vt.) Medical College, 1846; who held a position in the Department of the Interior, Washington, D. C., and was afterward inspector of prisoners during the Civil War; died at his home in Elmira, N. Y., August 2, aged 83.

Edward F. Menger, M.D. Medico-Chirurgical College of Philadelphia, 1884; a member of the Medical Society of the State of Pennsylvania; physician to the Old People's Home; died at his home in Philadelphia, August 3, from acute nephritis, aged 51.

Edward F. Paramore (registration, Wis., 1899); for fifty-three years an eclectic practitioner; a veteran of both the Mexican and Civil Wars; died at his home in Oconto, Wis., August 1, from paralysis, aged 78.

Samuel Joseph Patterson, M.D. Bellevue Hospital Medical College, New York City, 1867; of Dunlap, Iowa; died at the Methodist Hospital, Omaha, Neb., June 18, from postoperative pneumonia, aged 65.

Barnett P. Watts, M.D. College of Physicians and Surgeons, Keokuk, 1871; a member of the Illinois State Medical Society; died at his home in Randall (East Galesburg), Ill., July 31, aged 62.

Peter E. Jones, M.D. Medical Faculty of Queen's University, Kingston, Ont., 1866; formerly Indian agent of the Mississaugas of the New Credit, died at his home in Hagersville, Ont., June 29.

Joseph R. McLeod, M.D. College of Physicians and Surgeons, Keokuk, 1877; a pioneer practitioner of Findlay, Ohio; and a veteran of the Civil War; died at his home July 30, aged 75.

John H. Cox, M.D. Cincinnati College of Medicine and Surgery, 1854; a veteran of the Civil War; died at his home in Guthrie, Okla., July 8, from cerebral hemorrhage, aged 86.

Asher D. Atkinson, M.D. New York, 1840; one of the founders of the American Numismatic Society; died at his home in New Brunswick, N. J., June 26, aged 88.

Alfons Edler von Rosthorn, professor of gynecology and obstetrics at Vienna, where he succeeded Chrobak in 1907, died recently. He was one of the distinguished foreign guests at the Boston session of the American Medical Association in 1906, at which time a biographical sketch and a portrait were published in The Journal, May 5, 1906, pages 1372 and 1375. He delivered an address on "Uterine Cancer," and was made an honorary member of the Association. For the last seven years he has been associated with A. Martin in the publication of the *Monatsschrift für Geburtshülfe und Gynäkologie*. The second part of his important work on gynecology, in collaboration with Chrobak, which forms Vol. XX of Nothnagel's "System of Medicine," was published last year, the special subject being malformations of the female genital organs, classified from the etiologic standpoint. He was a contributor to many medical journals and wrote important chapters in Virt's "Handbook of Gynecology" and von Winckel's "Handbook of Obstetrics." His strong personality left a marked impression on his students and on all those brought in contact with him. He was born in Vienna in 1857 and had a professorship in turn at Prague, Graz and Heidelberg before he accepted the call to Vienna. He had many friends in this country and was the brother-in-law of Dr. C. S. Bacon of Chicago.

Society Proceedings

COMING MEETINGS

Amer. Association of Obstetricians and Gynecologists, Fort Wayne, Ind., September 2.
Amer. Electrotherapeutic Association, New York, September 14-16.
Colorado State Medical Association, Estes Park, September 19.
Michigan State Medical Society, Kalamazoo, September 15-16.
Missouri Valley, Med. Society of, Council Bluffs, Ia., September 9-10.
New Mexico Medical Society, Roswell, September 15-16.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
Utah State Medical Association, Ogden, September 21-22.
Wyoming State Medical Society, Cheyenne, September 1-2.

STATE MEDICAL SOCIETY OF WISCONSIN

Sixty-third Annual Meeting, held at Madison, June 30-July 2, 1909

(Concluded from page 480)

Cerebral Surgery

Dr. J. L. Yates, Milwaukee: Distinct emphasis should be laid on the underlying physiology, and a great many questions will arise in daily practice, such as apoplexy, meningeal hemorrhage in the new-born and cerebral tumor.

DISCUSSION

Dr. Arthur W. Rogers, Oconomowoc: It is disastrous to try to lower blood pressure in cases of intracranial tension. Cerebral hemorrhage is known to be amenable to treatment, but a decompression operation is often advisable. In regard to cerebral tumors: In diagnosis pay especial attention to headaches, vomiting and condition of the eye grounds, examining for choked disc, thus making early diagnosis.

Dr. N. M. Black, Milwaukee: In cases of suspected intracranial pressure, an immediate and prompt examination of the eye grounds by means of the ophthalmoscope and perimeter is important, and the earliest possible diagnosis should be made, so that surgical relief may be promptly given.

Address in Surgery: The Surgical Management of Handicapped Patients

Dr. George W. Crile, Cleveland, Ohio: Handicapped cases now largely constitute the mortality in surgical operations. Many patients with Graves' disease have been frightened to death. The psychic factor must be given special consideration. Cocain properly applied to nerve trunks affords absolute protection. The handicap of hemorrhage is now well under control by the use of direct transfusion of blood, injection of serum and special clamps. In the entire domain of medicine there is no subject so neglected, so badly done, with so much needless distress and disaster as the administration of anesthetics. The untrained anesthetist invites disaster. The administration of the anesthetic ranks close in importance to the work of the operating surgeon. Nitrous oxid with oxygen is excellent, especially in short operations, in which there is a strong contraindication to ether or chloroform. The shock is comparatively slight. The advantage of nitrous oxid over ether is greater when the handicap is in the central nervous system than when the handicap is in the heart. Scopolamin and morphin prior to gas anesthesia form an agreeable adjuvant; but gas with scopolamin and morphin should be reserved for certain handicapped patients, in whom it has been abundantly proved that this combination is distinctly safer and incidentally incomparable as to comfort. As an illustration, in patients with senile or diabetic handicap, use gas or oxygen anesthesia in amputations of lower limbs, cocainizing the sciatic nerve, and making a feather edge division of tissue. Similar careful work may render successful surgical treatment of cancer in the very aged, and when there is great hemorrhage transfusion of blood should be employed. We must enlist new and fundamental methods in these cases, and to accomplish this we require the use of greater facilities in the hospital, and a greater number of assistants, and the entire surgical resources of the hospital must be so mobile as to be concentrated at any moment on the fate of the patient. Surgery will then offer relief to a large number of patients who are now refused operation, or who, if operated on, succumb.

Experimental Investigation of Cancer

Dr. C. H. Bunting, Madison: This is one of the greatest problems in medicine. The scientific world has been criticized for directing its efforts rather to the cause than to the cure of cancer. But the criticism is scarcely deserved, as much work is being done in both directions. The causation of cancer is still unknown. Much has been expected from recent experimental methods, but as yet the results are disappointing. Cancer is pandemic, extending from the poles to the equator; although it is particularly a disease of the temperate zones. The negro is much less susceptible than the white race. France leads the world in percentage of cancer. Over 60 per cent. of cases occur in females. The greatest number of cases occur after 45, and the average age in the United States is 58. Hard labor out of doors gives susceptibility to cancer. More cases occur in small cities than in large. Wooded, hilly regions give undue proportion of cancer cases. Analysis of cases shows definite foci, groups of cases, cancer houses and cancer streets. It is a question whether or not cancer is really on the increase. The apparent increase is due to greater length of life, more exact diagnosis and closer statistics. Yet the first case of proved contagiousness of human cancer has yet to be reported. Chronic irritation is the most important predisposing if not actual cause of cancer. Note the frequency of cancer occurring in the scar of ulcer of the stomach, in the gall bladder following gallstones, and as the result of x-ray burns. Operation in this precancerous stage is often indicated as a preventive. Pathologic study as yet has disclosed no organism to be associated with cancer; there is no evidence that cancer is produced by a parasite. Those cells which become cancerous first show a degeneration of the protoplasm of the cell which causes a change in the nucleus. Jensen, in 1903, discovered that he could transmit cancer from one mouse to another by inoculation. The cancerous material which he thus produced in 1903 is still alive and growing in many of the cancer laboratories of the world. If any parasite existed it must be coextensive with the cell, because fragments of cells when inoculated on mice will not grow; but that a parasite should be of the same size exactly as the cell seems absurd. Cancer cells show great resistance to the action of the cold. The tumor cell of cancer is practically immortal. Artificial immunity to cancer has been produced in laboratories, in the lower animals. Jensen secured a serum from the rabbit which will cure cancer in mice. Dr. Crile has protected inoculated dogs by injecting the blood of immune dogs. It is along these lines of immunity that a cure for the disease is hoped for, but so far the work has been unsuccessful. It is interesting to note that the immunity once obtained renders the animal immune not only to the type of tumor injected, but to all types of malignant tumor, which again demonstrates that we are dealing not with a parasite, but with a biologic disease. The results experimentally have been unsatisfactory up to this point, but there is hope that we may yet find a cure for, even though we do not discover the cause of cancer.

Pompeian Surgical Instruments; with Exhibition of Instruments

Dr. L. F. Frank, Milwaukee, exhibited replicas of the collection of ancient surgical instruments taken from the ruins of Pompeii, including probes, spatulæ, curettes, traction and sharp hooks, perforaters, forceps, rectal specula, uterine trivalve and quadrivalve specula, trocars, cannulæ, phlebotomes, scissors, fixation forceps, epilating forceps, calculi extractors, male and female catheters and dilators. These instruments were beautifully made, usually of bronze, and were very similar to instruments designed for similar purposes and at present in use. While, however, the ancients performed Cesarean section, hysterectomy, laparotomy, lithotomy, nephrectomy and herniotomy, yet their surgery was, of course, largely confined to minor operations.

Report of the Recent Epidemic of Spinal Paralysis in Wisconsin

Dr. Jacolyn Manning, Eau Claire: A careful examination of all the facts at my disposal shows that anterior poliomylitis is a highly contagious disease, and that this particular epidemic was the result of an infection which journeyed along the main highways of travel from the Old World to the Eastern United States and thence to the Middle West.

DISCUSSION

Dr. C. M. Echols, Milwaukee: It is difficult to investigate this subject properly owing to the failure of physicians to report data. Little help can be secured from state boards of health in investigating this disease. They have statistics on mortality but not on morbidity. The etiology of the disease is doubtful. There is no symptom-complex by which we can make a diagnosis until after the damage is done. The disease is likely to attack children in perfect health and living under sanitary conditions as well as others. This is a crippling as well as a killing disease, from 50 to 60 per cent. of those attacked becoming permanently crippled.

DISCUSSION

Dr. C. A. Harper, Secretary State Board of Health: It is now a settled proposition that this is a disease of gastrointestinal origin. There seems to be a strong contagious element in the disease. Under present circumstances quarantine seems to be the only remedy.

Dr. L. W. Juergens, Portage: I would recommend the use of static electricity, what is called the wave current, instituted soon after the acute stage has been passed. Under this treatment patients usually recover the use of their paralyzed limbs.

Address in Medicine: Bearings of Occupational Conditions on Medicine

Dr. David L. Edsall, Philadelphia: We have a marvelous dearth of knowledge and great apathy shown in this country regarding these conditions, and an unhappy lack of regulation. This is to be contrasted with the activity shown in European countries and the excellent laws protecting the workingman in his occupations. I might cite an instance of one firm that makes an ingenious safety device and sells it, but it is not used in that firm's factory. Instances of this character should make the people of the United States bow their heads in shame, especially when we compare our disgraceful conditions with the excellence abroad. Physicians are the only persons with some scientific information who can observe the effect on public health of these conditions, and from whom the information should emanate which will lead to a betterment in the regulation of these occupational conditions.

Treatment of Syphilis

Dr. O. H. Foerster, Milwaukee: Mercury given for two or three years, combined with iodid during the third year, is still the accepted treatment of syphilis. The abortive treatment has proved a failure. Treatment should be instituted before the development of lesions in all cases in which the spirochaeta is found. Atoxyl is inferior to mercury in its control of symptoms and is not devoid of danger. Circumstances should determine the choice of the method of administration of mercury. Subcutaneous and intramuscular injections are finding favor. They are accurate and prompt, not entirely free from danger and possess the disadvantage of having to be repeated at short intervals. Two and one-half years' vigorous treatment of the disease is considered sufficient in this country to effect a cure. The Wassermann test is difficult of application and appears to stand in direct ratio to the length and vigor of treatment. It can not be said that at the present time the test is conclusive as a prognostic measure to determine a cure.

Treatment of Chronic Gonorrhea

Dr. E. A. Fletcher, Milwaukee: Gonorrhea untreated does not tend to recovery, but rather to progression. Many parents with chronic gonorrhea have exacerbations during treatment, but this does not prevent ultimate recovery, nor are such relapses indications for cessation of the treatment. Our purpose in treatment is not only to eliminate the gonococcus but also to restore the tissues to normal so far as possible. The discharge should be reduced to the minimum by daily irrigations. Injections and instillations are inferior to irrigations. Narrow meatuses are incised and suppurating ducts opened or cauterized. Infiltrations are treated by dilation. Medicated bougies are to be condemned, and ointments are usually of little service. When chronic prostatitis exists, massage of the seminal vesicles is advisable, followed by bladder irrigations and occasional posterior dilatation.

The Sociologic Aspect of the Venereal Diseases

Dr. P. F. Rogers, Milwaukee Over 90 per cent. of our young men stray from the paths of virtue before marriage; 60 per cent. contract venereal diseases which are difficult to cure. More wives than prostitutes have venereal diseases, innocently contracted from husbands; thousands of unborn babes are annually killed by prenatal infection; 60 per cent. of the blindness in the country is due to venereal disease. One-eighth of all cases in New York hospitals are venereal; 200,000 infected persons walk the streets of New York daily. These diseases burden society with incompetence. What are we going to do about it? The fundamental requirement is knowledge of how such diseases are acquired and transmitted. Teach the young boy and girl in the school, by a process of natural induction, by a slow evolution and unfolding of the subject, to know the truth about themselves and about the reproduction of the race, just as they are taught the mechanism of the fertilization, reproduction and development of flowers in botany. Let this instruction lead naturally at the age of puberty to a study of sexual physiology and hygiene; inculcate feelings of the highest respect and reverence for Nature's most wonderful secret, but let it no longer be a secret, to be hinted at, guessed at, giggled over and learned all distorted from contaminating sources. Teach the young man the manliness of self-restraint and virtue, and the falsity of the double standard of morality which condones in man what it condemns in woman, and at the same time teach him plainly the consequences of vice. Put innocent womanhood on its guard, and manhood on its honor to protect woman in the sacred relations of wedlock as carefully as she would be shielded from violence from without. Teach parents, by special lectures in the schools, to train their children as carefully in matters pertaining to sex as in deportment and religion; let mothers learn the wide difference between innocence and ignorance. Let physicians be diligent in disseminating the truth in season and out of season; and let pulpit and press break silence, lift the dense pall of ignorance, mystery and superstition that has rested so long on a subject that so vitally concerns society; let in the clear sunshine of intelligent enlightenment and truth, and we shall have a cleaner, purer, healthier and happier citizenship than the world has ever known.

DISCUSSION

President Gilbert E. Seaman, Milwaukee We should emphasize on every occasion the fact that gonorrhea is so frequently the cause of blindness. It has been estimated that from 25 to 33.3 per cent. of all cases of blindness are due to gonorrheal infection at the time of birth, and this infection can be absolutely prevented.

Dr. J. A. Bradfield, La Crosse: Whatever is done on this subject must come from the medical profession. I have been utterly disgusted with the teaching of our religious brethren on this subject, many of whom show woeful ignorance of its fundamental principles, on which it is their duty to be well posted. Religious teaching does not reach the root of the subject. Proper instruction in sexual physiology will do more toward the upbuilding of our nattion than anything else.

Detection of Tubercle Bacilli in the Blood

Drs. M. P. Ravenel and **Karl W. Smith**, Madison: About three months ago Rosenberger, of Jefferson Medical College, reported the finding of tubercle bacilli in the blood of patients in whom there were no signs or very slight signs of tuberculosis; and gave this out as a method of early diagnosis at a time when the disease would be readily curable. An examination of the blood of 18 tuberculous patients by this method, which is a very simple one, failed to demonstrate the tubercle bacillus in the blood in a single case. This investigation has been confirmed by reports from all over the world, and the only conclusion that can be reached is that the Rosenberger method is of no value.

Resection for Tuberculosis of the Hip Joint

Dr. H. Greenberg, Milwaukee: Cases suitable for resection are as follows: Cases of hip tuberculosis which, owing to mistaken diagnosis and hence, misdirected therapeutics have been allowed to progress until considerable destruction, abscess formation, and even mixed infection have occurred. There are other cases which despite early and correct diagnosis and diligent application of proper conservative treatment progressively go on with more destruction of tissue, abscess formation and grave constitutional symptoms. Another class of patients apparently yield to accepted therapeutics but continue from time to time to have renewed acute attacks, perhaps many years after the original one. In still another class the course is so rapid and virulent that nothing but radical procedure can save life or limb. When amyloid disease becomes evident or when extensive necrosis has occurred resection is especially indicated. In short, as soon as it becomes manifest that the recuperative powers of the patient are not sufficient to overcome the ravages of the disease, showing that a retrogressive process is going on, operation is positively indicated.

DISCUSSION

Dr. H. E. Dearholt, Milwaukee: Satisfactory results in the treatment of tuberculous joints do not depend so much on the technic of the operation as on the general hygienic conditions.

Other Papers Read

The following papers were also read: "Intravenous Therapy," by Dr. A. N. Baer, Milwaukee; "Neglect of the Sacroiliac Articulation by the General Practitioner," by Dr. Edward Evans, LaCrosse; "Treatment of Acute Gonorrhea," by Dr. D. J. Hayes, Milwaukee; "Vaginal Hysterectomy; A New Operative Technic to Establish a Sound Pelvic Floor and to Prevent Cystocele," by Dr. Ralph Elmergreen, Milwaukee; "The Physician and the Child," by Dr. L. R. Sleyster, Appleton; "Present Status of the Ocular Tuberculin Reaction," by Dr. S. G. Higgins, Milwaukee.

NEW JERSEY STATE MEDICAL SOCIETY

Annual Meeting held at Cape May, June 23-25, 1909

(Continued from page 477)

Indications for the Induction of Labor, Instrumental Delivery through the Vagina, and Cesarean Section

Dr. E. P. Davis, Philadelphia, said that the cases may be divided into those that have had the test of labor and those that have not. In patients who have not had the test of labor, labor should not be induced because of pelvic deformity. Whenever, by spontaneous efforts, the presenting part did not engage in the pelvis, the application of forceps was to be declined. An effort should be made to stimulate the patient's expulsive forces. If the parents place great value on the life of the child, labor should not be induced, because of the high fetal mortality; but if this is not the case, the best time for the induction of labor is at the thirty-fourth week. Delivery by abdominal section should be undertaken only when mother and child were in good condition, and no previous attempts to deliver had been made by forceps, version or any other means. When the mother was infected in long and impossible labor, delivery by Porro's operation offered the best chance for the mother. Occasionally, children, though badly bruised and injured by previous attempts at delivery, were saved by this operation.

Indications for Interference during Labor

Dr. Simon Marx, New York: In my opinion one gift that is possessed by very few obstetricians is the faculty of knowing both the how and the when for operative interference. I think that the operator should keep in mind the following: (1) The study of the woman before labor. (2) A positive appreciation of the position and presentation of the fetus and its relation to the pelvis. (3) The constant control of the fetal heart action and the maternal condition. (4) Interference only when there are positive indications which warrant such interference.

In estimating the safety of the unborn child the constant regularity of the heart beats is of undoubted value, while as regards the mother the pulse and temperature play a prominent part. Never interfere with labor save (1) when the mother shows symptoms of beginning exhaustion or (2) exhaustion of the fetus. To cope successfully with such an emergency as a sudden irregularity of the fetal pulse with a discharge of meconium from a woman whose os was hardly distended I doubt if one could operate quickly enough or deliver with such rapidity as to succeed without producing dangerous lesions. I think that when on examination a neurotic or spastic condition of the os is found with sharp edges, chloral should be given in divided doses up to three grams. In cases in which during the first stages there was danger of lagging pains and exhaustion, I frequently have found opium of good service.

DISCUSSION ON INDUCED LABOR

Dr. J. Watson Martindale, Camden, said that in women who have not had the test of previous labor, labor might go on without interference, even if there were considerable pelvic deformity. In those who had had the test of previous labor, he would unhesitatingly suggest the Cesarean section. Dr. Martindale said that there were more lacerations occurring in primiparæ than physicians usually think, as they often examine the skin perineum without inspecting the vagina. The number of lacerations in women delivered before his arrival was no greater than in those delivered when he was present. He had frequently felt the perineum tear while he was doing his best to prevent it. He described the technic of pubiotomy, and said that the indications were a true conjugate of three inches and a half, and possibly three and one-quarter. He did not agree with Dr. Marx that the subject of obstetrics is insufficiently taught in medical schools. On two occasions Dr. Martindale has found it necessary to induce labor on account of the uncontrollable vomiting in pregnancy. He had found calomel, in small, divided dose, of great benefit in threatened eclampsia. He thought that frequent examinations tended to produce sepsis, and that to apply the forceps before there was complete dilation of the os was likely to result in laceration of the cervix. On the other hand, it was possible to be too tardy in applying them. He said that the transverse diameter was materially increased by laying the woman on her back with her knee flexed on her thighs, and her thighs on her abdomen, and instructing her to pull on her knees. When a woman was suffering from severe labor pains and there was slow dilation of the os, he gave her enough morphin to deaden the pain.

Dr. Ellis W. Hodges, Plainfield, wondered whether methods for the quick delivery of women were not often intended more for the convenience of the operator than for the good of the patient, although he thought that one should interfere before the mother was so exhausted by the pain, shock, and fatigue that convalescence would be indefinitely prolonged. The nervous type of women, he said, often suffer with uterine inertia. The uterus plays out after a time, and he thought that in such cases the physician was warranted in bringing on labor. In case of an occipito-posterior presentation, he said, the only thing to do was to pull pretty hard. In case of rachitic dwarfs, nothing but Cesarean section should be attempted. If the diagnosis of placenta prævia is made early, he thought that labor should be brought on before the seventh month; but if the patient had gone to full term, one should at once plug the cervix and do Cesarean section. In cases of eclampsia, the uterus should be emptied at once. If the cervix were hard, this should be done by Cesarean section.

Dr. Edward J. Ill, Newark, did not approve of vaginal Cesarean section. He had seen, also, several cases of incurable vesicovaginal fistula due to high forceps delivery. He thought that the majority of patients with deep cervical tears remain invalids for the rest of their lives. In placenta prævia, when the bag of membrane could be felt anywhere in the vagina, it was not necessary to resort to prompt Cesarean section. If eclampsia came on in the seventh or eighth month, Cesarean section should be done; but not the vaginal Cesarean section, the results of which had been very disastrous.

Dr. Richard C. Morris, Philadelphia, thought that the importance of internal pelvimetry had been exaggerated; but he thought, also, that no physician had a right to attend a primipara without a knowledge of the size and shape of her pelvis, or to attend a multipara who had had a previous difficult delivery, without having studied the case from the standpoints of her previous labor and present physical condition. He said that it was impossible to learn these measurements accurately without the administration of an anesthetic. He made an appeal for a more general recognition of the value of induced labor, and said that the time would come when every woman with a conjugate diameter of four and a half centimeters, or less, would be submitted to Cesarean section. He had had great success in saving many patients from the major operation by means of induced labor, the practice of which also reduced the number of cases of forceps delivery and version. He agreed with the view that the forceps should not be applied to the unengaged head, as a general rule; but qualified this by saying that it should not be done unless one knew the pelvic diameter and the woman had been in labor pains for two or three hours. In a difficult forceps operation, the patient should be kept profoundly anesthetized during the third stage, and allowed to come out of ether just before the final delivery, the uterus then being strengthened by a dose of ergot. He did not think that quinin had any more effect than a glass of wine, acting as a general stimulant. In regard to placenta prævia, he said that he had yet to see a cervix so rigid and tight in a case of placenta prævia that had produced hemorrhage as not to permit him to pass the index finger readily through the cervix. He believed that in such cases Cesarean section had an exceedingly narrow field. In eclampsia, he thought that vaginal Cesarean section was not indicated in all cases. It should be performed in cases in which the condition came on without warning.

Dr. L. Davis said that if the test were made, it would probably be found that large numbers of lacerations occurred in both the anterior and the posterior segment. Failure to close lacerations in the anterior segment resulted in subsequent prolapse of the urethra, dystocia, and other minor troubles. If uterine inertia existed, it should be treated before delivering the patient. He was not in favor of giving ergot until the uterus had been emptied, but he approved of the use of strychnin. Section should be done in placenta prævia only when there had not been severe hemorrhage, when the child was viable, and when hospital facilities were at hand. Eclampsia tended to cure itself. He had not done vaginal Cesarean section, which he considered a dangerous operation. He considered the old treatment of placenta prævia satisfactory, if one did not care about the child. In taking the pelvic measurements, he thought it well to measure across the two processes of the ischia, and also the intertuberosity distance. He considered elective surgery the surgery of the future.

(To be continued)

AMERICAN ORTHOPEDIC ASSOCIATION

Twenty-Second Annual Meeting, held at Hartford, Conn., June 14-16, 1909

(Concluded from page 588)

Preliminary Study of the Mechanics of the Upright Position, With Especial Reference to Backache. (A Combined Orthopedic and Gynecologic Study)

Drs. R. W. Lovett and E. Reynolds, Boston, described a method for automatically determining the center of gravity of the individual in the upright position. The relation of the center of gravity to the hip joint, sacroiliac joints, feet, etc., they contended, determines the amount and character of back strain. They studied and formulated the effect of corsets and high-heeled shoes on the balance of the body and on the position of the center of gravity, and exhibited charts illustrating this.

DISCUSSION

Dr. A. Freiberg: What does displacement of the center of gravity mean? Has the proper method been adopted for correcting what is a pathologic state of affairs? I have heard nothing of what put the center of gravity forward. The logical thing to do is to go at the cause and correct it. I have not yet recovered sufficiently from my astonishment to swallow, with composure, those high heels and corsets which I see pictured on the wall.

Dr. Sayre: Undoubtedly many of our cases of backache are due to intrauterine and intrapelvic causes, and many of the pelvic abnormalities come from abnormal positions held on account of deficient muscular force. The chief use of a corset is to keep the bands of a woman's skirts from cutting into her, as a woman does not have her clothes hung from suspenders. I have had difficulty in getting corsets made loose enough over the iliac crests not to be uncomfortable when they are tight enough around the buttocks.

Dr. Wilson: Would similar conditions existing in a man be met by the application of some form of corset?

Dr. Lovett: We have simply presented a method that we believe is going to be of some use in elaborating the question of why the center of gravity is too far forward. We are sure that the corsets carry the center of gravity back and that high-heeled shoes also do this. In my practice I use corsets on men, just as in women, but less frequently, because one sees fewer backaches in men.

Dr. Reynolds: We must regard corsets as merely a temporary means of relieving the acute stage of static backache. In the cases that I have seen I have first relieved the cause in operating on the abdominal condition, and have used the corset to carry the patients beyond the backache, and then let them drop it. Bad corsets produce static backaches, and these can not be relieved so long as the bad corset is worn. We must learn to produce a good corset that is sightly and is near enough to the prevailing fashion to induce the patients to wear it.

Relation of Posture to Human Efficiency and Influence of Poise on the Support and Function of the Viscera

Dr. Joel E. Goldthwait, Boston: The human body is a delicately balanced organism, and no one part can be used with undue strain without straining other parts and wasting energy. In normal balance the muscles and ligaments are used without undue strain, and the movements are made with the minimum expenditure of energy. Not only is the correct balance of importance because of the effect upon the joints, bones, muscles and ligaments, but also because of the interference with visceral support and function that must take place if the poise is materially disturbed.

DISCUSSION

Dr. McKenzie: Unless we are to pander to a degenerate age we should not rectify postural defects by means of braces, but by training the physical organism so that it can maintain the ideal standard and attitude. While we want all the information that can come from mathematical study of the subject, it must be approached by the general study of the intuitive perception of the right attitude.

Dr. C. Riely: I have thought along the same lines regarding the circulation of the spinal cord as Dr. Goldthwait, and have talked over the subject with an anatomist and a neurologist. I had no doubt that it was the pressure of the muscles that caused the stagnation in the anterior and posterior vertebral columns, but thought it was an obstruction in cases of spine disease by the disease in the bodies of the vertebræ, as the veins that enter the bodies are very large.

DR. FREIBERG: How is Dr. Goldthwait going to take the patients from the tuberculosis clinic and give them the chance that other people have in the present state of civilization?

DR. J. E. GOLDTHWAIT: I do not believe it impossible to give them a chance. What has been done is no more remarkable than what can be done. When they use their bodies better they will have greater resistance and more power for work.

Congenital Deformities

DR. AUGUSTUS THORNDIKE, Boston, gave a short historical sketch of theories of causation, which to-day seem to be narrowed down to three: mechanical influence, heredity and maternal impressions. Further study, he said, is needed to reveal the true etiology and chronology of the inception of many skeletal deformities. Such studies must be of three kinds: studies of human embryos, of abortion sacs and of the embryos of certain lower animals.

DISCUSSION

DR. RUGH: I am not yet convinced that maternal impressions play no part in the production of congenital deformities. Recent investigation demonstrates the presence of nerve fibers in great number in the placenta and in the umbilical cord. This has gone a great way toward establishing the fact of a more intimate nerve relation between mother and child than had previously been suspected. I feel that in certain cases this acts as a factor in producing congenital deformities.

DR. MCKENZIE: I do not know what Dr. Thorndike meant by his statement that no case of congenital amputation of the limb very high up had been reported. I have seen lately a boy whose right arm had apparently been amputated just above the elbow.

DR. BAER: I should like to report another case almost identical with that of Dr. McKenzie, in which there was complete amputation just below the elbow.

DR. THORNDIKE: I think that Dr. Rugh is right. It was a surprise to me to find so little about maternal impressions in literature. As I have found cases of amputation high up so rare, I hope the gentlemen will report theirs fully with illustrations.

Bilateral Congenital Dislocation of the Head of the Radius; and Congenital Absence of the Acromion Process, Bilateral

DR. W. G. TURNER, Montreal, read these two papers. The first case presented a marked increase of the length of the radius as compared with the tibia, non-development of the coronoid fossa, and absence of the orbicular ligament. Strong silk was employed as an artificial orbicular ligament. He exhibited photographs and a radiograph of the second case, showing a condition not previously described.

DISCUSSION

DR. BLODGETT: Was there effusion between the head of the radius and the ulna? In that case one would expect to find a rotating condition of the rudimentary muscles.

DR. W. G. TURNER: There was no effusion between the radius and ulna. The upper end of the radius was perfectly movable. I operated on the left arm a year ago, with satisfactory result as to function; though the patient can not get the arm past the midway position.

Other Papers Read

"A Case of Myositis Ossificans with Multiple Exostoses," by Dr. V. P. Gibney, New York; "Some Myogenous Types of Rigid Spine," by Dr. G. B. Elliott, New York; "Toxic Arthritis of the Hip in Children," by Dr. Michael Hoke, Atlanta, Ga.; "Suggestions on the Improvement of Plaster-of-Paris Technic," by Dr. A. H. Frieberg, Cincinnati; "Increased Growth in the Shaft of the Femur Following Fracture," by Dr. John Ridlon, Chicago.

Medicolegal

Admissibility of Lay Testimony as to Mental Capacity

The Supreme Court of the Unitied States says, in the will case of Turner vs. American Security & Trust Company, that the rule governing the admission of the testimony of lay witnesses as to their opinion for or against the mental capacity of a testator, which has been prescribed by this court for the courts of the United States, is easy of statement and administration. Where the issue is whether a person is of sound or unsound mind, a lay witness who has had an adequate opportunity to observe the speech and other conduct of that person may, in addition to relating the significant instances of speech and conduct, testify to the opinion on the mental capacity formed at the time from such observation. In no other way than this can the full knowledge of an unprofessional witness with regard to the issue be placed before the jury, because ordinarily it is impossible for such a witness to give an adequate description of all the appearances which to him have indicated sanity or insanity.

Such testimony has been well described as a compendious mode of ascertaining the result of the actual observations of witnesses. Ordinarily, and perhaps necessarily, the witness, in testifying to his opportunities for observation and his actual observation, relates more or less fully the instances of his conversation or dealings with the person whose mental capacity is under consideration, and it is, of course, competent, either on direct or cross-examination, to elicit those instances in detail. The order of the evidence must be left to the discretion of the trial judge; but, when sufficient appears to convince the trial judge that the witness has had an opportunity for adequate observation of the person's mental capacity, and has actually observed it, then the judge may permit him to testify to his opinion.

This is not to say that, in a very clear case, an appellate court ought not to review the discretion of the trial judge. For instance, if it should appear that the witness had never spoken to the testator or seen any significant act, but merely observed him driving from day to day through the streets, and the opinion of such a witness as to sanity had been received, it would be the duty of the appellate court to correct the error. On the other hand, if the witness for years had been in constant communication with the testator, had frequently conversed with him and observed his conduct from day to day, the exclusion of the opinion of the witness ought to be corrected by the appellate court. These are instances of a plain abuse of judicial discretion.

Sufficiency of Testimony of Physician as to X-Ray Photograph

The Supreme Court of Iowa says, on the second appeal in the assault case of State vs. Matheson, that on the first appeal an exhibit, consisting of an x-ray photograph or radiograph which it was claimed showed the location of a bullet close to one of vertebræ was held to have been properly admitted in evidence, being identified by the electrician who made it as such a photograph. On the last trial the electrician who made the photograph was not called as a witness, and it was argued that the exhibit was improperly admitted. The court, however, thinks that there was no error in the ruling admitting the exhibit, for the physician who directed the taking of the photograph, and who was present when it was taken, testified that it was a correct representation of the condition of the subject's body at the time it was taken. This physician would know, as well as the man who operated the machine, that the radiograph was the result of the action of the x-ray machine in producing a representation of the bony structure of the body, and of any piece of metal, such as a bullet, which might be imbedded therein. Neither the operator nor the physician would be able to testify that the spot indicated on the radiograph was a bullet, but it would be competent for either of them to testify that the spot was such as a bullet imbedded in the body would produce. For the reasons just indicated, the testimony of the physician that the spot on the radiograph to which his attention was called represented a bullet in the body was also competent.

that convalescence would be indefinitely prolonged. The nervous type of women, he said, often suffer with uterine inertia. The uterus plays out after a time, and he thought that in such cases the physician was warranted in bringing on labor. In case of an occipito-posterior presentation, he said, the only thing to do was to pull pretty hard. In case of rachitic dwarfs, nothing but Cesarean section should be attempted. If the diagnosis of placenta prævia is made early, he thought that labor should be brought on before the seventh month; but if the patient had gone to full term, one should at once plug the cervix and do Cesarean section. In cases of eclampsia, the uterus should be emptied at once. If the cervix were hard, this should be done by Cesarean section.

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Dr. Reynolds: We must regard corsets as merely a temporary means of relieving the acute stage of static backache. In the cases that I have seen I have first relieved the cause in operating on the abdominal condition, and have used the corset to carry the patients beyond the backache, and then let them drop it. Bad corsets produce static backaches, and these can not be relieved so long as the bad corset is worn. We must learn to produce a good corset that is sightly and is near enough to the prevailing fashion to induce the patients to wear it.

Relation of Posture to Human Efficiency and Influence of Poise on the Support and Function of the Viscera

Dr. Joel E. Goldthwait, Boston: The human body is a delicately balanced organism, and no one part can be used with undue strain without straining other parts and wasting energy. In normal balance the muscles and ligaments are used without undue strain, and the movements are made with the minimum expenditure of energy. Not only is the correct balance of importance because of the effect upon the joints, bones, muscles and ligaments, but also because of the interference with visceral support and function that must take place if the poise is materially disturbed.

DISCUSSION

Dr. McKenzie: Unless we are to pander to a degenerate age we should not rectify postural defects by means of braces, but by training the physical organism so that it can maintain the ideal standard and attitude. While we want all the information that can come from mathematical study of the subject, it must be approached by the general study of the intuitive perception of the right attitude.

Dr. C. Riely: I have thought along the same lines regarding the circulation of the spinal cord as Dr. Goldthwait, and have talked over the subject with an anatomist and a neurologist. I had no doubt that it was the pressure of the muscles that caused the stagnation in the anterior and posterior vertebral columns, but thought it was an obstruction in cases of spine disease by the disease in the bodies of the vertebræ, as the veins that enter the bodies are very large.

Dr. Freiberg: How is Dr. Goldthwait going to take the patients from the tuberculosis clinic and give them the chance that other people have in the present state of civilization?

Dr. J. E. Goldthwait: I do not believe it impossible to give them a chance. What has been done is no more remarkable than what can be done. When they use their bodies better they will have greater resistance and more power for work.

Congenital Deformities

Dr. Augustus Thorndike, Boston, gave a short historical sketch of theories of causation, which to-day seem to be narrowed down to three: mechanical influence, heredity and maternal impressions. Further study, he said, is needed to reveal the true etiology and chronology of the inception of many skeletal deformities. Such studies must be of three kinds: studies of human embryos, of abortion sacs and of the embryos of certain lower animals.

DISCUSSION

Dr. Rugh: I am not yet convinced that maternal impressions play no part in the production of congenital deformities. Recent investigation demonstrates the presence of nerve fibers in great number in the placenta and in the umbilical cord. This has gone a great way toward establishing the fact of a more intimate nerve relation between mother and child than had previously been suspected. I feel that in certain cases this acts as a factor in producing congenital deformities.

Dr. McKenzie: I do not know what Dr. Thorndike meant by his statement that no case of congenital amputation of the limb very high up had been reported. I have seen lately a boy whose right arm had apparently been amputated just above the elbow.

Dr. Baer: I should like to report another case almost identical with that of Dr. McKenzie, in which there was complete amputation just below the elbow.

Dr. Thorndike: I think that Dr. Rugh is right. It was a surprise to me to find so little about maternal impressions in literature. As I have found cases of amputation high up so rare, I hope the gentlemen will report theirs fully with illustrations.

Bilateral Congenital Dislocation of the Head of the Radius; and Congenital Absence of the Acromion Process, Bilateral

Dr. W. G. Turner, Montreal, read these two papers. The first case presented a marked increase of the length of the radius as compared with the tibia, non-development of the coronoid fossa, and absence of the orbicular ligament. Strong silk was employed as an artificial orbicular ligament. He exhibited photographs and a radiograph of the second case, showing a condition not previously described.

DISCUSSION

Dr. Blodgett: Was there effusion between the head of the radius and the ulna? In that case one would expect to find a rotating condition of the rudimentary muscles.

Dr. W. G. Turner: There was no effusion between the radius and ulna. The upper end of the radius was perfectly movable. I operated on the left arm a year ago, with satisfactory result as to function; though the patient can not get the arm past the midway position.

Other Papers Read

"A Case of Myositis Ossificans with Multiple Exostoses," by Dr. V. P. Gibney, New York; "Some Myogenous Types of Rigid Spine," by Dr. G. B. Elliott, New York; "Toxic Arthritis of the Hip in Children," by Dr. Michael Hoke, Atlanta, Ga.; "Suggestions on the Improvement of Plaster-of-Paris Technic," by Dr. A. H. Frieberg, Cincinnati; "Increased Growth in the Shaft of the Femur Following Fracture," by Dr. John Ridlon, Chicago.

Medicolegal

Admissibility of Lay Testimony as to Mental Capacity

The Supreme Court of the United States says, in the will case of Turner vs. American Security & Trust Company, that the rule governing the admission of the testimony of lay witnesses as to their opinion for or against the mental capacity of a testator, which has been prescribed by this court for the courts of the United States, is easy of statement and administration. Where the issue is whether a person is of sound or unsound mind, a lay witness who has had an adequate opportunity to observe the speech and other conduct of that person may, in addition to relating the significant instances of speech and conduct, testify to the opinion on the mental capacity formed at the time from such observation. In no other way than this can the full knowledge of an unprofessional witness with regard to the issue be placed before the jury, because ordinarily it is impossible for such a witness to give an adequate description of all the appearances which to him have indicated sanity or insanity.

Such testimony has been well described as a compendious mode of ascertaining the result of the actual observations of witnesses. Ordinarily, and perhaps necessarily, the witness, in testifying to his opportunities for observation and his actual observation, relates more or less fully the instances of his conversation or dealings with the person whose mental capacity is under consideration, and it is, of course, competent, either on direct or cross-examination, to elicit those instances in detail. The order of the evidence must be left to the discretion of the trial judge; but, when sufficient appears to convince the trial judge that the witness has had an opportunity for adequate observation of the person's mental capacity, and has actually observed it, then the judge may permit him to testify to his opinion.

This is not to say that, in a very clear case, an appellate court ought not to review the discretion of the trial judge. For instance, if it should appear that the witness had never spoken to the testator or seen any significant act, but merely observed him driving from day to day through the streets, and the opinion of such a witness as to sanity had been received, it would be the duty of the appellate court to correct the error. On the other hand, if the witness for years had been in constant communication with the testator, had frequently conversed with him and observed his conduct from day to day, the exclusion of the opinion of the witness ought to be corrected by the appellate court. These are instances of a plain abuse of judicial discretion.

Sufficiency of Testimony of Physician as to X-Ray Photograph

The Supreme Court of Iowa says, on the second appeal in the assault case of State vs. Matheson, that on the first appeal an exhibit, consisting of an *x*-ray photograph or radiograph which it was claimed showed the location of a bullet close to one of vertebræ was held to have been properly admitted in evidence, being identified by the electrician who made it as such a photograph. On the last trial the electrician who made the photograph was not called as a witness, and it was argued that the exhibit was improperly admitted. The court, however, thinks that there was no error in the ruling admitting the exhibit, for the physician who directed the taking of the photograph, and who was present when it was taken, testified that it was a correct representation of the condition of the subject's body at the time it was taken. This physician would know, as well as the man who operated the machine, that the radiograph was the result of the action of the *x*-ray machine in producing a representation of the bony structure of the body, and of any piece of metal, such as a bullet, which might be imbedded therein. Neither the operator nor the physician would be able to testify that the spot indicated on the radiograph was a bullet, but it would be competent for either of them to testify that the spot was such as a bullet imbedded in the body would produce. For the reasons just indicated, the testimony of the physician that the spot on the radiograph to which his attention was called represented a bullet in the body was also competent.

Current Medical Literature

Medical Record, New York

August 7

1 *Who are the Unfit? C. E. Woodruff, U. S. Army.
2 Tuberculosis of the Pericardium cured by Incision and Drainage. C. L. Gibson, New York.
3 *Ocular Tuberculin Reaction. J. R. Hicks, New Brighton, N. Y.
4 *Brain Tumor with Unusual Symptoms. J. E. Dale, Fort Collins, Colo.
5 Mumps vs. Tetanus. D. I. Macht, Baltimore.
6 Unreliability of Measurements of Ancient Skulls. A. L. Benedict, Buffalo.
7 Tabular Report of Cases of Cancer Treated with Trypsin. W. S. Bainbridge, New York.
8 *Ivy Poisoning. A. W. Baird, New York.

1. **Who Are the Unfit?**—Woodruff claims that there is one form of unfitness which is causing dreadful disability wholly unnoticed—unfitness to climate when there is a migration to a climate markedly different from the ancestral one. Previous studies of the nervous and insane, he asserts, have shown that those most out of adjustment to this sunny climate, that is, the blonds, furnish a higher percentage of cases than they should, or than they do in cloudy places, like Scotland. The new studies of criminals and paupers show that the same factor is at work here too, among the myriad other causes of these unhappy types of human rejects. Similar studies among European criminals have not shown anything of this nature, because the populations are not migrants. Indeed, in Europe, it has always been customary to think of the criminal as brunette. In a visit to Clinton Prison, in New York State, where the worst classes of criminals are confined, and where he expected to see the place full of modern "black beards," Woodruff was astounded at the large number of blonds—some of them of very light type. It seemed as though the facts as to the brunetteness of criminals were the reverse of the popular idea on the subject. Of 279 white men whose eye color is mentioned, 144 had blue eyes, 40 gray, hazel and light brown, and only 95 dark shades of brown. The hair color of 253 was available for comparison and shows a general correspondence with the eye color. There were 19 with very light hair, 61 with light brown and brown, 61 dark brown, and only 112 black. The two extremes of very dark brunettes and very light blonds, such as the typical swarthy Italian and the yellow-haired Scandinavian, are in a decided minority, but the medium types tend strongly to blondness. It is safe to say, nevertheless, that blonds do not constitute anywhere near half of our population, which is notoriously brunette, with brown or gray eyes and dark hair in decided preponderance. The explanation of this local phenomenon is as follows: Criminologists are of the opinion that there is no criminal type, but that there is an instability of the nervous system or neurasthenia which is the basis of habitual crime. Hence, in America we find more nervous instability among the blond types and more of them drift into crime as a result. In many other ways, they prove their unfitness for these southern climates, notably an increased susceptibility to disease. Light affects the young far more than it does the parents. Hence blond adult immigrants may remain in fair health, but the deterioration begins in the next generation. Therefore we should not expect to find very many foreign-born among these blond criminals. The report of the superintendent of New York prisons shows that only 22 per cent. of the criminals in Clinton Prison are foreign-born and most of these foreigners are from brunette countries, like Italy, Poland and Russia. Very few come from blond countries, for only five were born in Scotland, one in Sweden, and none in Norway. The native-born, therefore, furnish the great majority of the blue-eyed professional criminals in New York.

3. **Ocular Tuberculin Reaction.**—The method of sterilizing the eye preparatory to using the tuberculin test as carried out by Hicks is as follows: For four days the patient's brow and face are washed with soap and water three times a day, and a 1/8000 solution of bichlorid of mercury is dropped into the eye after each washing. At the end of six days a culture is taken, just as in diphtheria, and incubated. If at the end of twenty-four hours or longer there are any colonies, the bichlorid solution is resumed for two days; then the eye is irrigated for two days more, twice a day, with physiologic saline solution to wash away the bichlorid and any organisms remaining. The next morning another culture is taken and incubated for twenty-four hours and cover slide preparations are made and examined, and if no organisms are found, the tuberculin test is made in the usual way. The eye after irrigation with saline solution is bandaged the afternoon before to keep foreign substances out. Hicks has failed to get any specific reaction in a number of cases when the test is applied in the above way, when without sterilization he has obtained the reaction in Bright's disease when there was no reason to suspect tuberculosis.

4. **Brain Tumor.**—Dale describes the case of a lad who suffered from brain tumor, but had none of the typical symptoms of cerebral compression. His symptoms indicated gastrointestinal irritation up to a few hours before death. The lad died of respiratory failure. The tumor was very small and was situated in the fourth ventricle, attached to its roof, to the right of the median line and directly over a point in the floor a little posterior to the center. It was an endothelioma.

8. **Ivy Poisoning.**—Baird has formulated the following treatment for ivy poisoning: (1) No scratching; (2) no ointments in the acute stage; (3) no bandages, for these tend to spread the poison to adjacent surfaces; if any protector is necessary, let it be a loosely applied dressing of absorbent cotton, kept moist at all times and changed at short intervals; (4) frequent and copious washings with lukewarm water and an unirritating soap; in handling the inflamed surface it is best to wear rubber gloves; (5) after the parts are washed, apply 2 to 4 per cent. warm solution of permanganate of potassium. This completely neutralizes any poison with which it comes in contact; the strength of the solution and the frequency of application are matters of judgment with the physician; (6) after the acute stage is past, ointments are permissible.

Boston Medical and Surgical Journal

August 5

9 *Etiology of Tumors Considered from the Standpoint of Congenital Tumors and Tumors Following Repeated Injuries. S. B. Wolbach, Albany, N. Y.
10 Surgical Significance of Pus, Blood and Bacteria in the Urine. E. A. Codman, Boston.
11 Superficial Dermatitis of the External Auditory Canal. C. J. Blake, Boston.
12 *Psychasthenia. A. H. Ring, Arlington Heights, Mass.

9. **Etiology of Tumors.**—Wolbach endeavors to present data which support the belief that the congenital tumors and tumors of infancy and early childhood most commonly take origin from isolated or misplaced cells. At least there is very positive evidence that certain tumors, such as the teratomata, hypernephromata, mixed tumors of the kidney and parotid and the retinal tumors arise from such errors of development. In the second part he endeavors to show that in the cases of *x*-ray carcinoma and a few other instances, such as bilharzia disease and Kangri carcinoma, there is a proved causal relationship between malignant tumors and antecedent pathologic processes. The more peculiar the source of the injury, the greater is the value of the evidence when the association is marked by a strikingly large number of cases. The similarity in the evolution of the skin carcinoma in widely different kinds of exposures points to a common underlying process whatever the nature of the injurious agent. In the cases of *x*-ray carcinoma and bilharzia carcinoma, there is a proved similar antecedent pathologic process. *X*-ray carcinoma is to be regarded as the first instance of an experimentally produced malignant tumor. Its occurrence following definite lesions of the skin, of a continuous and progressive character, places the whole subject of carcinomata following repeated injuries on a firm basis. It designates this field of investigation as the most promising one for research into the origin of carcinoma, because we have at least one and perhaps several examples of proved causal relationship.

The facts presented do not speak for belief in simple trauma as a cause for tumor production. They do indicate that long-continued progressive lesions of connective tissue supporting epithelium are responsible for the acquisition of malignant properties by the epithelium. Finally, it may be said that no series of experiments on animals, in the attempt to produce tumors, has ever been carried out which in any way approached duplication of those conditions found in man associated with the production of cancer. The element of time is, perhaps, the most important factor. Many years always elapse between the onset of the antecedent pathologic process and the occurrence of cancer. In the case of the *x*-ray, ten years is, perhaps, the shortest period.

12. **Psychasthenia.**—Ring believes that Janet, who coined the word "psychasthenia," intends to include under the term obsessions, manias of doubt, tics, agitations, phobias and the deliria of contact, states of anxiousness, neurasthenias and bizarre sensations of strangeness and depersonalization. These he would group together into a grand psychosis similar to hysteria and epilepsy. Psychasthenia, he says, is at base a disturbance of the feelings, the will and perception, and may range from mere eccentricities in the superficially normal through mild depression to melancholia and dementia. There are two types: (1) those in which the disturbance shows itself principally in motor fatigue, and (2) those in which the principal affection is in the sensory-motor and emotional sphere, the latter offering the less favorable prognosis. Phobias result from an unhealthy, prolonged feeling-tone of depressing ideas and may be conscious or subconscious. Doubts and indecision are evidence of fatigue of the higher centers which preside over formative and newly synthetized associations. The final judgment is thus rendered difficult or impossible and the victim finds himself in a state of vacillation and with a tendency to revert to the lower and simpler associations long formed. Weakened cerebral inhibition also plays its part. Obsessions and impulsions are the emotional result of the above factors and show themselves principally as a failure to inhibit the feeling-tone of ideas automatically repeated, yet the all-pervading asthenia checks the impulses short of accomplishment. Psychasthenia should be differentiated from hysteria, epilepsy, dementia præcox, manic-depressive insanity and paresis.

New York Medical Journal

July 31

13 *The Bacteriology of Gonorrhea. N. P. Rathbun and T. H. Dexter, Brooklyn.
14 *Leucocytes in Tropical Malarial Infections. P. T. Talbot, New Orleans.
15 *Achylia Gastrica and Insufficientia Pylori. A. L. Benedict, Buffalo.
16 *Does Zymosia Gastrica Solve the Soil Problem of Tuberculosis? M. I. Knapp, New York.
17 Herpes Simplex. F. C. Knowles, Philadelphia.
18 Symptomatology and Diagnosis of Pancreatic Disease. L. Louria, Brooklyn.
19 Tuberculous Infection through the Tonsil and Adenoid. J. A. Pratt, Aurora, Ill.
20 Nasal Tuberculosis Terminating in Tuberculous Meningitis. A. J. Hucy, New York.

13. **Bacteriology of Gonorrhea.**—Rathbun and Dexter claim as the result of clinical observation and investigation (1) that there are numerous cases of uncured gonorrhea which have no subjective symptoms or apparent objective symptoms other than those which can be determined by cultures made from secretions from the genitourinary tract; (2) that freedom from pus cells in the expressed smear from a prostatic secretion is by no means an evidence of cure of chronic prostatitis; nor is the presence of pus cells in a smear from the expressed secretion an indication of gonorrheal infection of that gland, nor is the presence of a Gram-negative diplococcus in the smear of this secretion a positive indication of the existence of gonorrhea of the prostate. At present we have no means at our disposal by which we can positively assure a patient that he is cured of gonorrheal prostatitis. Our best prospects of determining that fact lie along the line of perfecting methods of distinguishing the gonococcus from other organisms which so closely resemble it, and which may be accomplished by further experimental work with various culture media and proved by experimental inoculations. The authors found that the growth of the Gram-negative diplococcus on the blood serum which can not be transplanted to other media is strongly significant of the gonococcus, whereas Gram-positive diplococci, or Gram-negative diplococci growing on various other media, such as plain agar, potato, etc., are doubtful. The number of cases of uncured and incurable gonorrheal prostatitis is far in excess of what most clinicians are ready to believe.

14. Abstracted in The Journal, May 1, 1909, p. 1448.

15. **Achylia Gastrica and Insufficientia Pylori.**—Benedict attempts to show that there is such a condition as achylia gastrica and such a condition as insufficientia—or at least, relaxatio—pylori. They are absolutely different conditions, having in common only the element of depression of function, which may be functional in the ordinary sense or as secondary to an organic lesion. They are so different that there can be no question of correct nomenclature or interpretation of a single disease or symptom complex, so different that they may exist independently or may coincide in the same case. There is no characteristic, diagnostic, much less pathognomonic, symptomatology of either. The diagnosis must depend on actual investigation.

16. **Zymosia Gastrica and Tuberculosis.**—Knapp presents the results of the study of the gastric condition of 100 persons appearing at the New York Board of Health clinic for pulmonary tuberculosis. He found that each one of the 100 consecutive cases was one of zymosia gastrica. One patient showed zymosia gastrica many years before his pulmonary conditions developed. It would seem that this occurrence of sporulating, budding yeast is rather more than a mere coincidence, and that zymosia gastrica must bear a certain relation either to the development or to the progress of tuberculosis. Knapp assumes that zymosia gastrica may possibly be held responsible for the soil condition of tuberculosis and that it apparently constitutes some factor in the condition of tuberculosis.

Lancet-Clinic, Cincinnati

July 17

21 Two Cases of Gross Cerebral Hemorrhage. A. E. Stearne, Indianapolis.
22 Gallstones. R. J. Jones, Greenfield, O.
23 Uterine Disease—Chronic Endometritis, Endocervicitis. C. S. Ashfield, Cincinnati.

Kentucky Medical Journal, Bowling Green

July 1

24 Roentgen Ray. E. T. Bruce.
25 Standardization the Foundation of Professional Pharmacy. F. E. Stewart, Philadelphia.
26 Diagnosis of Acute Intestinal Obstruction. J. H. Blackburn. Bowling Green, Ky.
27 Leptomeningitis. G. T. Fuller, Mayfield, Ky.
28 Pain and its Indications. J. H. Chrisman, Owenton.
29 Model Management of a Case of Obstetrics. E. B. Houston, Hazel, Ky.
30 Some Obstetric Breakers. W. R. Burr, Auburn, Ky.
31 Eclampsia. M. C. Comer, Bedford.
32 Postpartum Hemorrhage. W. A. Haynes, Howell, Ky.
33 Ocular Disturbances during Pregnancy. A. O. Pfingst, Louisville, Ky.
34 The Heart in its Relation to Operative Procedures. H. N. Leavell, Louisville, Ky.
35 Ankylostomiasis. B. G. Allen, Somerset.
36 Medical Ethics. W. London, Franklin, Ky.
37 Effects of Suggestion on the Human Economy. G. Purdy, New Liberty.
38 Treatment of Epididymo-orchitis. E. L. Heflin.
39 Multiple Fractures. R. C. Falconer, Lexington.
40 Use of Drugs in Medicine. J. L. Atkinson, Campbellsville.

New York State Journal of Medicine, New York

July

41 *Voluntary Patients in State Hospitals for the Insane. A. W. Ferris, New York City.
42 *Epilepsy. W. H. Kidder, Oswego, N. Y.
43 *Suggestions from Physiology in Treatment of Renal, Cardiac and Vascular Diseases. W. M. Gibson, Utica, N. Y.
44 Leukemia; A Symptom, Not a Disease. H. G. Webster, Brooklyn, N. Y.
45 Gastroenterostomy. E. A. Vander Veer, Albany, N. Y.
46 *A New Plastic Operation for the Relief of Cicatricial Palatopharyngeal Contractures and Adhesions. J. O. Roe, Rochester, N. Y.
47 *Problem of Efficient Nursing for Persons of Moderate Means. W. O. Stillman, Albany, N. Y.
48 Descending Exercise in the Treatment of Disease. H. Stern, New York City.
49 *Nature of Foot and Mouth Disease. V. A. Moore, Ithaca, N. Y.
50 Renal Tuberculosis. W. S. Nelson, Utica, N. Y.
51 Nervous Symptoms of Chronic Diffuse Interstitial Nephritis. S. Baker, Utica, N. Y.

41. Abstracted in The Journal, Feb. 13, 1909, p. 581.

42, 43, 47, 49. Abstracted in The Journal, Feb. 20, 1909, pp. 654, 655, 657.

46. **Palatopharyngeal Contractures.**—In Roe's case, the fauces were so extensively lacerated during an attempt to excise the tonsils, about four months before, that when healing had taken place there was a complete synechia or adhesion between the soft palate and the pharynx. There was complete occlusion of the posterior nares, except for a very small opening through which an ordinary small silver probe could

be passed. The adhesion was so thick and the tissues so infiltrated with inflammatory deposits, the result of the extensive inflammation that followed the operation, that the obtaining of a healed opening at each side through this thickened tissue proved to be practically out of the question. As it was necessary to cover but one surface of this opening, the upper or palatal side was most available. A rather broad flap was taken from the inside of the cheek near the lower jaw, including sufficient submucous connective tissue to assure the vitality of the flap. This was then brought down and the end turned backward and upward around the lower border of the soft palate, which had been sufficiently denuded of its mucous membrane around its lower border to secure union. This flap was then stitched at the sides and also through and through along the upper border of the end of the flap that had been turned up behind the palate.

Complete union of the flap took place, and on healing there was no undue contraction at the site of these flaps, nor was there the slightest inclination for a readherence of the soft palate to the pharynx at any point, all of which was very gratifying. The surfaces from which the flaps had been taken were speedily covered with mucous membrane and soon all traces of it disappeared. The central portion of the palate was thickened, and this thickened tissue was utilized by cutting and stitching it into shape so as to form a very desirable uvula. As the levator palati muscles had not been sufficiently injured to destroy their function, by the construction of this new uvula the function of the soft palate in closing the posterior nares during deglutination and phonation was almost completely restored.

Southern California Practitioner, Los Angeles

July

52 Control of Disease by Prevention. W. J. Barlow, Los Angeles.
53 Pulse Counting by Nurses. J. C. Ferbert, Los Angeles.
54 *Present Popular Interest in Psychotherapy and Religiotherapy.* C. L. Allen, Los Angeles.
55 Diagnosis of Inflammations of the Colon and Appendix. D. Fulton, Los Angeles.
56 Diagnosis of Affections of the Biliary Tracts. R. Smith, Los Angeles.
57 Plague in Seattle. W. Wyman, Washington, D. C.

United States Naval Medical Bulletin, Washington, D. C.

July

58 *Treatment of Elephantiasis by Internal Administration of Tinctura Ferri Chloridi. P. S. Rossiter, U. S. Navy.
59 Syphilis. W. J. Zalesky, U. S. Navy.
60 Pathology of Epidemic Asthma. O. J. Mink, U. S. Navy.
61 Etiology of Heat Prostration. A. G. Grunwell, U. S. Navy.
62 Liver Abscess from the Point of View of Etiology and Prophylaxis; Pathology and Differential Diagnosis; and Treatment. G. B. Crow, J. A. B. Sinclair, and G. F. Cottle, U. S. Navy.
63 Appliances Improvised on Sick-bay Bunks. C. M. de Valin, U. S. Navy.
64 Fracture of Patella: Operation at Sea. N. J. Blackwood, U. S. Navy.
65 *Recurrent Nasal Hemorrhage. R. Spear, U. S. Navy.
66 *Traumatic Pneumonia. C. F. Sterne, U. S. Navy.
67 Liver Abscess. M. A. Stuart, U. S. Navy.

58. **Treatment of Elephantiasis.**—Dr. Dubriel du Broglio, of the French colonial medical service, originated a treatment of elephantiasis consisting of the internal administration of 30 drops of tinctura ferri chloridi three times daily, in combination with bandaging of the affected limbs and complete rest in bed. Rossiter determined to make the experiment of administering the tinctura ferri chloridi without bandaging and permitting the patient to follow his usual mode of life. In every case so treated, the patient has shown decrease in the size of the affected part within a few weeks, and the effect on the fever is apparent even sooner. Rossiter therefore concludes, as a result of these experiments, that tinctura ferri chloridi has a marked effect on the elephantoid process, decreasing the size of the affected parts and restoring function to an even greater degree. Its most marked effect, however, is on the attacks of elephantoid fever, these attacks being markedly lessened in severity, the interval between attacks being greatly lengthened, and in several of the cases the attacks have apparently ceased. In one case of prolonged elephantoid fever with very marked chyluria of three weeks' duration, the chyluria disappeared entirely within sixty hours under the administration of tinctura ferri chloridi alone. So far as can be judged from the number of cases treated, elephantiasis appears to be arrested by this treatment if continued for six to twelve months, and if some method can be devised in conjunction therewith to dispose of the elephantoid tissue already formed, Rossiter believes that a cure may be looked for.

65. **Recurrent Nasal Hemorrhage.**—Spear's patient sustained a fracture of the left nasal bone, the vomer and mesethmoid. At the time of the injury there was considerable hemorrhage from both nostrils. The hemorrhage was controlled by packing. There was severe hemorrhage on a number of occasions afterward. The nature of the hemorrhage was peculiar; the bleeding was profuse while it lasted, and stopped apparently when the blood pressure lowered. Several careful examinations of the nasal cavity failed to reveal the source of the bleeding, but in all probability the bleeding point was situated in the right side of the mesethmoid region. The blood either came from a small artery that had been partially torn by the bone fragments or may have come from a damaged plexus.

There was no hemophilia in the boy's history or in the history of his family. As the case progressed and the boy lost more blood he become more anemic. His condition was critical and it was imperative to control the bleeding. Both facial arteries were tied without success. It was noticed that pressure over the right common carotid stopped the bleeding, so under cocain anesthesia the carotids on the right side were exposed; the external was ligated and a ligature was placed around the internal, but was not tied. This procedure controlled the hemorrhage for thirty hours, when it recurred, but to a much lesser degree. Finally, both nares were plugged with strips of gauze supported by Kyle's long nasal splints. This procedure controlled the hemorrhage. The following day these splints were removed; the bleeding again started, but was controlled by placing two long plugs made of twisted cotton soaked in a solution of boric acid; these plugs were placed in the right nasal chamber well back and upward, on the mesethmoid, and held in position by one long Kyle nasal splint. These plugs were left in place for forty-eight hours, the nasal cavity being kept fairly clean by dropping a little boric acid solution into and about the splint every two hours. The plugs were gently removed and replaced by others of a similar character, which were also left in position for forty-eight hours. These were replaced by one plug which was left in for twenty-four hours. No bleeding occurred after the introduction of the cotton plugs.

During the progress of the case gelatin was given in large quantities by the mouth, as was also calcium lactate and injections of 30 c.c. of rabbit's serum, all with the idea of increasing the coagulability of the blood.

66. **Traumatic Pneumonia.**—In Sterne's case, a man was struck on the left chest wall by a large coal bag while coaling ship. He reported fifteen or twenty minutes after the accident, complaining of severe pain at the seat of injury. Physical examination revealed nothing, except tenderness over the area of chest struck. There was no evidence of external injury other than redness and tenderness. No signs could be elicited which would point to fracture of a rib, nor was there any constitutional disturbance, other than pain on respiration. The injury was therefore treated as a contusion. At 7 p. m. the next day he again reported at the sick-bay complaining of some headache, accompanied by persistent pain in the chest, with some difficulty of respiration. Temperature was 104, pulse 96, and respiration 26. He was put to bed and showed no signs other than slight dulness on the left side from the second to the sixth rib in the nipple line. The treatment consisted in the administration of calomel, in broken doses, a sponge bath, and the application of an ice cap.

On the morning of the second day he had a rather severe nasal hemorrhage, temperature had dropped to 100.5, pulse to 84, and respiration to 22. A painful cough developed, dry in character so that no sputum was available. Magnesium sulphate was administered in dose of 1 ounce with good result. The ice cap was continued and he was given two sponge baths during the day. At 1 p.m. his temperature was again 104, the pulse 96, and respiration 24. Physical signs were still negative. All through this case the physical signs were negative, but the temperature, pulse and character and frequency of the respiration with the rusty sputum were sufficient to make the diagnosis. The element of trauma is interesting, as it is a rare cause of pneumonia, and in this case was evidently directly responsible for the disease in view of the fact that the patient was previously perfectly well and had no history of exposure or any of the other well-known predisposing factors in the etiology of pneumonia.

Buffalo Medical Journal

July

68 Urogenital Tuberculosis. B. Lewis, St. Louis.
69 Guess Work in the Practice of Medicine. B. C. Loveland, Syracuse, N. Y.
70 An Interesting Case of Dermatitis Exfoliativa. W. A. Howe, Phelps, N. Y.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

June

71 Diet as a Prophylactic and Therapeutic. H. W. Wiley, Washington, D. C.
72 Therapeutics of Solution of Calcium Creosote. L. Kloipinski, Washington, D. C.
73 Treatment of the Stokes-Adams Syndrome. R. W. Wilcox, New York City.
74 Standardization of Materia Medica Products. F. E. Stewart.
75 The Adrenal Principle as the Main Active Agent in Pituitary, Testicular, Ovarian and other Animal Extracts. C. E. de M. Sajous, Philadelphia.

Detroit Medical Journal

July

76 Serotherapy of Epidemic Cerebrospinal Meningitis. C. H. Dunn, Boston.
77 Treatment by Incision and Wiring of Simple Intractable Fractures with Report of Cases. S. C. Graves, Grand Rapids, Mich.
78 Speech Defects in Children. E. B. McCrady, Pittsburg, Pa.
79 The Screw-Worm Fly with Report of a Case of Myiasis Narium. A. W. Blain, Detroit.
80 Aphasia, Somnolence and Mental Hebetude Following Nasal Operation. E. J. Bernstein, Kalamazoo, Mich.

Archives of Internal Medicine, Chicago

July 15

81 *Hyperalgesia of the Skin Overlying Active Lesions in Pulmonary Tuberculosis. W. C. White and K. H. Van Norman, Pittsburg, Pa.
82 *The Prevalence and [illegible] among Apparently Healthy S[illegible] the United States Army. W. [illegible] Barracks, La.
83 *Disseminated Miliary [illegible] W. Tileston, Boston.
84 Problems in Immunity and the Treatment of Infectious Diseases. P. H. Hiss, Jr., New York.
85 The Clot Culture in Conjunction with the Agglutination Test in Typhoid. R. Lyons, New Orleans.
86 *Modification of the Sahli Butyrometric Test Meal. J. C. Friedman, Chicago.
87 The Blood in Pertussis. J. A. Kolmer, Philadelphia, Pa.

81. **Hyperalgesia of the Skin in Pulmonary Tuberculosis.**—White and Van Norman have observed that hyperalgesia of the skin to pain, heat and cold sensations is present over active tuberculous involvement of the lungs. It has a very definite distribution, corresponding very closely to the limits of active involvement in the lungs. With the arrest of activity hyperalgesia disappears. Hyperalgesia depends on involvement of the lung and not of the pleura.

82. **Uncinariasis Among Southern-Bred Soldiers.**—Chamberlain says that infection with uncinaria is very common among southern-bred soldiers during the first three years of service. In 100 men examined, 60 per cent. showed uncinariasis. Among new recruits the percentage of infections is at times as high as 85. Southern-bred soldiers with more than three years' service show a much lower percentage of infection, only 11 per cent. in 33 cases. The worms gradually die out, most of them during the first three years, and under the favorable sanitary conditions obtaining in the army at home reinfection occurs rarely, if at all. The symptoms produced by a light infection with hookworms are so slight that they can not be detected by the usual methods employed by the examining surgeon and the diagnosis must be made with the microscope. An eosinophile count of over 5 per cent. is strong evidence of infection with an intestinal parasite, but one below 5 per cent. is no evidence against uncinariasis.

The parasite in probably all cases is *Necator americanus*. In some cases, the worm probably lives several years in the intestines. In many light infections the ova are difficult to find, requiring the complete examination of five or six cover-glass preparations. Farm life is very important as a predisposing cause. Among 74 men who had farmed at some time, 81 per cent. were infected. Most of the men had gone barefooted in childhood, and over half reported having had ground itch, though usually not since childhood. Southern recruits are less well-developed physically than northern ones. Uncinariasis in childhood is a probable cause of this underdevelopment. Light infections do not materially affect the efficiency of the soldier, though the majority of men report that they feel more vigorous after treatment. Treatment of the light infections is of great importance in any attempt to stamp out the disease.

83. **Disseminated Miliary Tuberculosis of Skin.**—Tileston calls attention to the occurrence in infantile miliary tuberculosis of a skin eruption, which consists of scattered discrete papules, which at the beginning are the size of pin-heads, and are soon capped by tiny vesicles with cloudy or purulent contents. Later on, the vesicle ruptures or dries up, and its place is taken by a crust. It is this stage which is most characteristic. The lesion is then from 2 to 3 millimeters in diameter; that is to say, about the size of a rose spot in typhoid fever, and consists of a flat papule, only slightly elevated, of a dull red color, often glistening. The center is occupied by a crust, on the removal of which there is disclosed a minute but sharply defined dell or hollow, varying in size from the point to the head of a pin. Healing takes place in case the child lives long enough, leaving a tiny white scar surrounded by a halo of brownish pigmentation. The duration of the individual lesion varies from one to several weeks. The spots appear in crops, so that all the different stages may be present at the same time. Rarely a vesicular type of eruption is seen, with vesicles up to the size of a small pea, surrounded by a slightly elevated area of redness and infiltration. This form likewise shows, when in the crusting stage, the characteristic hollow in the center.

The distribution is fairly constant, the majority of the spots being situated on the buttocks, genitalia and adjacent portions of the thighs; *i. e.*, on the parts covered by the diaper. This is probably due to irritation by the feces and urine, with consequent lowered resistance of the skin. The abdomen, front of the chest, thighs and legs, and sometimes the arms, face neck, palms and soles may show a few spots; the back is usually free, except the buttocks. The eruption is not, as a rule, symmetrical and is seldom profuse, the total number of spots usually not exceding from twenty to thirty, while often only half a dozen are present. They never become confluent.

Out of 32 cases of tuberculosis in children, in the first three years of life, examined by Tileston, 7, or 21 per cent., have shown the eruption. In view of the fact that most of the children were seen only once or twice, the real proportion must be considerably higher. The list includes cases of tuberculosis of the bones, lymph nodes, lungs, intestines, meninges and peritoneum. All the children with spots who came to autopsy were found to have miliary tuberculosis. It is by no means unlikely, however, that a few spots may appear on the skin in cases with localized tuberculosis, as occurs in older children and adults. In general, the chronic cases are more apt to show spots, while in the acute ones the patients probably die before the eruption has time to develop. Thus out of fourteen patients with tuberculous meningitis, only one had spots. Two hundred children suffering from various diseases, other than tuberculosis, failed to show any eruption resembling the one under consideration.

The cause of the eruption is the tubercle bacillus. In 70 per cent. of the cases, tubercle bacilli were demonstrated within the skin lesions, sometimes in large numbers. In others the bacilli were so scanty that they were found only after a prolonged search. The association with miliary tuberculosis and the presence of tubercle bacilli in the capillaries leave little doubt as to the mode of origin of the process; it is embolic, analogous to the formation of rose spots in typhoid and to the pustular efflorescence of staphylococcus septicemia.

86. **Modification of Sahli Butyrometric Test Meal.**—The method proposed by Friedman, for the study of the gastric functions is a modification of the Sahli test meal, consisting of one-third condensed milk and two-thirds water, the object being to obtain a stable emulsion of fat. With a very little extra work one can calculate the amount of gastric juice in

the stomach at the time of aspiration, and so determine its real acidity as well as the gastric motility, etc. This yields definite standards for comparison, which enables one to make a more accurate functional diagnosis than is at present possible otherwise. Among the advantages of this meal over the Ewald and Riegel meals is the consideration that the conditions of most of the gastric functions may be determined by a single aspiration. Its advantages over the Sahli meal are its constancy of composition, the ease with which it may be prepared and administered, its strong secretory stimulating powers, and the stability of the emulsion.

Louisville Monthly Journal of Medicine and Surgery

August

88 The Question of Psychotherapeutics. J. J. Moren, Louisville.
89 Pernicious Anemia. W. F. Boggess, Louisville.

Albany Medical Annals

July

90 Medicine and the Medical Profession. A. Jacobi, Albany.

Journal of the Michigan State Medical Society

July

91 Non-Specific Infections of the Intestines. G. H. Thomas, Holland, Mich.
92 Causes of Obscure Fevers in Children. I. L. Polozker, Detroit, Mich.
93 Modern Treatment of Diffuse Suppurative Peritonitis. F. C. Kinsey, Three Rivers, Mich.
94 Appendicostomy. J. A. MacMillan, Detroit, Mich.
95 Value of Physics Applied to the Practice of Medicine. A. T. Godfrey, Holland, Mich.
96 Hypertrophic Stenosis of the Pylorus in Infants. W. M. Donald, Detroit.
97 Intestinal Obstruction. A. J. Herrington, Bad Axe, Mich.

Journal of Nervous and Mental Disease, Lancaster, Pa.

July

98 Nature of Nerve Force and the Deep Reflexes. S. W. Mitchell, New York.
99 Flaccid Paralysis or Extreme Hypotonia of the Muscles which Poise the Head, and Other Symptoms Indicative of a Cerebellar Tumor. C. K. Mills, Philadelphia.
100 Differential Diagnosis of Grave Hysteria and Organic Disease of the Brain and Spinal Cord, Especially Disease of the Parietal Lobe. C. K. Mills, Philadelphia.

Journal Medical Society of New Jersey, Orange

June

101 The Pancreas as a Possible Field for Surgery. E. M. Foote, New York.
102 The Cancer Problem in New Jersey; Necessity of Early Diagnosis. J. A. McGlinn, Philadelphia.
103 Needs of the Medical Profession in Essex County. W. P. Eagleton, Newark.
104 The Physician in Politics. W. E. Ramsay, Perth Amboy.
105 The Meddlesome Doctor. J. H. Bradshaw, Orange.

July

106 *Recent Advances in Medical and Surgical Work. D. St. John, Hackensack.
107 *Acute Unilateral Septic Infarcts of Kidney, and Acute Diverticulitis of the Colon. G. E. Brewer, New York.
108 Progress in Medicine. T. N. Gray, East Orange.
109 Differential Diagnosis of Scarlet Fever. D. E. English, Summit.

106, 107. Abstracted in The Journal, July 31, 1909, p. 402.

Western Medical Review, Omaha

July

110 True Conservatism. J. P. Lord, Omaha, Neb.
111 Fracture of the Thigh. A. P. Fitzsimmons, Tecumseh, Neb.
112 Report of Work Performed by the Nebraska State Board of Health for 1908. E. J. C. Sward, Oakland, Neb.
113 Knowledge Gained from the Clinical Findings of Today. J. E. Pulver, Omaha.

Surgery, Gynecology and Obstetrics, Chicago

July

114 *Method of Combined Exploration and Decompression for Cerebral Tumors which Prove to be Inoperable. H. Cushing, Baltimore.
115 Blastomycosis of the Skin. A. Primrose, Toronto, Ont.
116 Treatment of Tetanus by Chloretone. W. H. Hutchings, Detroit.
117 *Transfusion, with [illegible] C. W. Crile, Cleveland.
118 Thoracic Surgery [illegible] Veer, Albany.
119 *Preservation of [illegible] Anatomy with Permanent Color of Muscles, Vessels, Nerves and Organs, by a New Method. E. Souchon, New Orleans, La.
120 *Prevention and Treatment of Sequels of Perineal Prostatectomy. J. E. Moore, Minneapolis.
121 *Resection of the Sciatic Nerve. K. A. MacKenzie, Portland, Oregon.
122 Choice of Time for Operation for Pelvic Inflammation of Tubal Origin. F. Simpson, Pittsburg, Pa.
123 Management of Labor Obstructed by Pelvic Disproportion. R. C. Norris, Philadelphia.
124 *Operative Procedures for Relief of Dystocia. H. A. Miller, Pittsburg, Pa.
125 *Radical Operation for Carcinoma of the Lower Lip. A. E. Hertzler, Kansas City, Mo.
126 *Herniotomy without Buried Sutures. E. M. Prince, Birmingham, Ala.

114, 120, 121. Abstracted in The Journal, July 31, 1909, pp. 407, 408, 409.

117, 119. Abstracted in The Journal, July 24, 1909, p. 320.

124. **Operative Procedures for Relief of Dystocia.**—Miller believes that in a perfectly healthy individual in whom there is no evidence of toxemia, it is justifiable to make an attempt to prevent the overgrowth of the child. In properly selected cases induced labor is less dangerous for the mother, carrying with it a lower mortality than either pubiotomy or Cesarean section. The induction of premature labor is probably the choice of procedures in cases in which the delivery can readily be accomplished at the thirty-sixth week or beyond, and in some instances might be indicated a week or more prior to this time. The proper time for interference should be determined by the Stone method of measuring the fetal head while still in the uterus, by careful pelvic measurements, and by repeated bimanual examinations by Mueller's method. It is extremely important to provide skilled care for the premature infant for at least two months after delivery, and the most essential part of this skilled care is that the child be breast-fed, by either the mother or a wet nurse. The method of delivery in any individual case should be determined before labor actually starts, as the maternal mortality comes largely from operations having been done when delivery by the natural forces supplemented by forceps operation have failed. Miller *can not conceive of any condition in which craniotomy* on the living child is justifiable.

125. **Carcinoma of Lower Lip.**—Hertzler advocates the removal of the glands and the gland-bearing tissue adjacent to the lip, in all cases, including the very early ones. The gland-bearing area would be the submental and the inframaxillary in the first link, and the subhyoid and the submaxillary in the second link, and finally, the deep cervical in the third. Hertzler believes that the first and second links should be removed in all instances. If these are not obviously involved, their removal, together with the gland-bearing tisssue in this region, is all that is required. Should they be obviously cancerous, then the third link, the deep cervical glands, on the corresponding side, or both sides, should also be removed.

The removal of this amount of tissue can best be made by an incision passing over either side of the point of the chin, curving over the inferior maxillary bone, extending back to the anterior border of the masseter muscle, hence downward to the point of crossing of the omohyoid and the sternomastoid muscles. The incisions pass on either side of the point of the chin. The object of this is to leave the skin attached at this point, for if the skin at this point is loosened it is difficult to keep the flaps in position over the point of the chin. When the lesion is extensive this point of attachment can not, of course, be preserved. The lymphatics pass on either side of this tissue and there is no reason for its removal. The submental space may easily be cleaned out by pulling the skin to either side. The character of the incision in the lip itself depends on the size of the lesion. As in the breast, the dissection should be begun at the point farthest from the growth and proceeded with toward the lesion. The dissection should begin, therefore, at the angle between the omohyoid and sternomastoid muscles. When the dissection is completed up to the chin, the tumor should be thoroughly cauterized before beginning the operation and protected by a wet formalin pack. The incision in the neck can be conveniently closed with a running suture of silk or catgut. Drainage should be provided for at the lower angle of the wound. For the closure of the incision in the border of the lip Hertzler has adopted a special plan. It is a double loop suture. The advantage of this suture is that the vermilion border is held in apposition, while the knots are all placed on the skin surface of the lip, where they cause no irritation.

126. **Herniotomy without Buried Sutures.**—Prince describes his method as follows: Make an incision one and a half inches above Poupart's ligament down to the fascia of the external oblique, freeing the anterior or external surface of this fascia from fat, etc. Then locate the external ring by stripping

covered. Then make the incision through the external oblique on a grooved director passed into the external ring, or without the use of the director, as one prefers. This incision should be so made that the reflected portion of the external oblique above Poupart's ligament will be sufficient to cover the cord. The sac is dealt with in the usual way. The fascia of the external oblique is then dissected from the internal oblique muscle until its edge can be easily brought down to the edge of the internal oblique and transversalis muscles. Both ends of a suture of strong silkworm gut are threaded on a needle. Each needle is passed through the transversalis and internal oblique muscles, both emerging through fascia of the external oblique. Both needles are now passed under the cord. One needle is passed below, the other above Poupart's ligament to the skin surface. These sutures are then tied over a piece of rubber tubing or roll of gauze, which brings the two muscles and fascia of the external oblique in contact with Poupart's ligament. This transplants the cord on top of the fascia of the external oblique. Then make a slit in the fascia of the external oblique to receive the reflected portion of the fascia, which is turned back to expose Poupart's ligament. This reflected portion of external oblique fascia is then pulled into the slit and acts as a covering of the cord. When these sutures are tied the wound is completely closed. The sutures may be made to come out above the wound and tied over a roll of gauze, as the deep sutures, and the wound is then closed by a subcuticular suture. The stitches are usually left in for twelve days. It is essential to have a good quality of silkworm gut.

Medical Herald, St. Joseph, Mo.

July

127 *Public Health Problems of the Nation. W. Wyman, Washington, D. C.
128 *Anesthesia in Children. W. W. Stevens, Kansas City, Mo.
129 Autointoxication. A. E. King, Blockton, Ia.

127, 128. Abstracted in THE JOURNAL, May 8, 1909, pp. 1535, 1536.

St. Louis Medical Review

June

130 Operative Treatment of Hemorrhoids. W. H. Stauffer, St. Louis.
131 Abscess of the Liver. W. Bartlett, St. Louis.
132 Anesthesia. W. E. Leighton, St. Louis.
133 Acute Hemorrhagic Pancreatitis, Following Perforation of a Duodenal Ulcer. L. G. Bartels, St. Louis.

July

134 *Epidemic Meningitis Treated with Flexner's Serum. D. L. Harris, St. Louis.
135 Some Ophthalmic Practices seen in Vienna in 1908. W. E. Klokke, St. Louis.
136 Treatment of Placenta Prævia. H. Schwartz, St. Louis.
137 Study of Chemistry in Medical Schools. W. H. Warren, St. Louis.

134. **Epidemic Meningitis.**—Harris has observed the results of the serum treatment in 14 cases of cerebrospinal meningitis. Of this number, 2 patients died. The remainder recovered. Of those who recovered, the only permanent impairment was deafness in one case.

Southern Medical Journal, Nashville

July

138 *Progressive Pernicious Anemia with Report of Cases. J. A. Witherspoon, Nashville.
139 Diseases of the Female Breast. A. M'Glannan, Baltimore.
140 *Malaria: Special Reference to what is not Malaria Fever. J. P. Bates, Nashville.
141 Etiology and Treatment of Diphtheria. O. N. Bryan, Nashville.
142 Problem of the Neurotic. W. H. Witt, Nashville.
143 Eye Injuries and their Immediate Attention. C. Fox, Birmingham, Ala.
144 Surgical Intervention in Treatment of Neurasthenic States. C. M. Rosser, Dallas, Tex.
145. Medical Ethics and Commercialism. C. M. Emmons, Washington, D. C.

138. **Progressive Pernicious Anemia.**—Witherspoon urges that in all cases of pernicious anemia there should be a thorough examination of the stools, special care being used in seeking for the *Bacillus capsulatus aërogenes*. When this bacillus or the percentage of anaerobic bacteria found in evacuations from bowels is large, then after thorough trial at colonic irrigation, and failure to improve symptoms or to lessen the percentage of bacteria, the operation of appendicostomy is warranted.

140. Abstracted in THE JOURNAL, May 1, 1909, p. 1448.

down the intercolumnar fascia by which this ring is partially

Interstate Medical Journal, St. Louis

July

146 Surgery of Kidney Stone. M. H. Richardson, Boston, Mass.
147 Diagnosis and Treatment of Early Cases of Tuberculosis. L. F. Flick, Philadelphia, Pa.
148 Nature of Cancer and Recent Additions to the Methods of Treating Inoperable Cancers. F. J. Lutz, St. Louis.
149 Melena—Recovery. W. T. Doran, New York City.
150 Aids to the Diagnosis of Tuberculosis, Chiefly by Means of Finding the Tubercule Bacillus. A. E. Taussig, St. Louis.
151 Blood Pressure, J. S. Myer, St. Louis.
152 Aphasia. S. I. Schwab, St. Louis, Mo.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 24

1 *Treatment of Disease. W. Osler.
2 Hercules and the Wagoner. D. J. Williams.
3 Esophageal Diverticulum. W. Taylor.
4 Common Types of Sore Throat. A. S. Green.
5 *Wassermann Reaction in General Paralysis of Insane. J. H. Smith and J. P. Candler.
6 Pneumonia Migrans Involving Whole of Both Lungs Followed by Empyema: Recovery. J. Bannerman.
7 Ca[illegible]oducing Cyanosis During Nasal Ad-[illegible] Oxid. F. Trewby.
8 Tr[illegible]flammations of the Eye. C. G. R. Wood.
9 Hydatid Disease. Recurrence: External Rupture: Recovery. A. W. Brodribb.
10 Intra-Abdominal Hemorrhage Associated with Labor. M. C. Barber.
11 Point in the Use of Kollmann's Urethral Dilator. A. MacLennan.
12 Unilateral Development of the Mamma in the Male. J. C. Fyshe.
13 Biotripsis. O. Baker.
14 Arsenic in Locomotor Ataxia. C. Wray.
15 Acute Tuberculous Arthritis. J. R. Keith.
16 Rigor Mortis in a Stillborn Child. C. Eglington.

1. **Treatment of Disease.**—Osler says that the student should follow most carefully the action of those drugs the pharmacology of which he has worked out in the laboratory. He should be sent out from the hospital knowing thoroughly how to administer ether and chloroform. He should know how to handle the various preparations of opium. Each ward should have its little case with the various preparations of the ten or twelve great drugs, and when the teacher talks about them he should be able to show the preparations. He should study with special care the action of digitalis on the circulation in cases of heart disease. He should know its literature. It should be taken as the typical drug for the study of the history of therapeutics. He should day after day personally give a syphilitic baby inunctions of mercury; he should give deep injections of calomel, and he should learn the history of the drug from Paracelsus to Fournier. He should know everything relating to the iodids and the bromids, and should present definite reports on cases in which he has used them. He must know the use of the important purgatives, and he should have a thorough acquaintance with all forms of enemata. He should know cinchona historically, its derivatives chemically and its action practically. He should study the action of the nitrites with the blood-pressure apparatus, and he should over and over again have tested for himself the action, or the absence of action, of strychnin, alcohol and other drugs supposed to have a stimulating action on the heart and blood vessels.

5. **Wassermann Reaction in General Paralysis of Insane.**—Smith and Candler examined a series of spinal fluids from cases of general paralysis and other diseases. The method employed was essentially that of Wassermann. They used ox blood corpuscles instead of sheep's. They examined 175 samples of cerebrospinal fluid, derived from 127 individuals. Of these 127, 64 were cases of general paralysis, and in 59, or 92.1 per cent., a positive result was obtained, while in 5, or 7.8 per cent., the reaction was negative. These 64 cases include 7 from which the fluid was obtained only after death, and all of these gave positive results. It might be objected that the examination of such postmortem fluids could give no trustworthy results. In the case of cerebrospinal fluids, however (whatever may be the case with serums), this is not so. If the fluid is withdrawn within twenty-four hours after death from a body which has lain in the cold room during the in-

terval (as was done in all the authors' postmortem cases), the Wassermann reaction is not altered. Examinations were made of such fluids from over 30 control cases, with no positive results. The spinal fluid even of a general paralytic, which had been negative during life, remained so after death. Of 21 cases undoubtedly in the most advanced stages of the disease, over 90 per cent. gave the reaction, while of 16 cases, certainly in a middle stage, only 81 per cent. were positive. They also examined 9 cases (not included above), in which the definite diagnosis could not be made clinically, though it was considered possible that general paralysis might develop. These all gave negative results. Fluids from 63 cases in which the patients were not suffering from general paralysis were examined, in 32 of which the fluid was obtained during life. In no single instance was a positive reaction obtained. These cases included melancholia (9); senile mania (10); epilepsy (2); cerebral tumor (2); cerebellar tumor; syphilitic meningitis; lues cerebri; tuberculous meningitis; alcoholism (3); disseminated sclerosis; dementia præcox; posthemorrhagic and other softenings; and a few fluids received for diagnosis of tuberculous or epidemic meningitis.

In suspected general paralysis the authors claim that a positive Wassermann reaction with the cerebrospinal fluid is practically diagnostic. In only two other conditions is it ever obtained, namely, in tabes and in syphilis located in the central nervous system of the meninges. In tabes it occurs regularly, but with much less frequency than in general paralysis.

Lancet, London

July 24

17 *Desirability of Early Operation in Acute Cases of Appendicitis. G. R. Turner.
18 Modern Progress in our Knowledge of the Pathology of General Paralysis. E. Jones.
19 Intramuscular Treatment of Syphilis, with Special Reference to the Insoluble Preparations of Mercury. G. Pernet.
20 Investigation into the Action and Uses of Fibrolysin in Middle-Ear Deafness. J. G. French.
21 Fate of Damaged Joints. R. Warren.
22 Painful Heels. E. R. Morton.
23 Purpura Hemorrhagica, with Abdominal Crises Due to Intestinal Effusion. G. P. Mills.
24 Treatment by Radium of Lymphatic Obstruction (Cervical, Submaxillary, and Axillary), in a Patient Suffering from [illegible] arden.
25 Di[illegible] Report of Royal Commission on [illegible]
26 The Prism as an Aid to Diagnosis and Paralytic Diplopia. R. B. Ferguson.
27 Case of Ruptured Uterus with Perfect Recovery. R. N. Geach.
28 Spasmodic Torticollis Following Chorea. T. E. Lister.

17. **Early Operation in Acute Appendicitis.**—Turner says that if acute cases are treated by early operation, when once the condition is clearly diagnosed, the mortality of such early operations, although done during the attacks, should not be, and will not be much, if at all, greater than of those done between attacks. He attributes the present mortality of operations during attacks almost entirely to delay.

Annales de Dermatologie et de Syphiligraphie, Paris

June, X, No. 6, pp. 353-416

29 *Decortication and Thiersch Flaps to Remove Traces of Tattooing. (Détatouage par décortication.) W. Dubreuilh.

29. **Removal of Tattooing.**—Dubreuilh relates two cases in which he relieved men of disfiguring tattooing by shaving off the superficial layer of the derma. It is not necessary to cut deep, but merely peel the surface. Thiersch flaps applied on this healthy raw surface take hold and grow with remarkable facility. The superficial layer is sliced off with a razor; no grafts are required on regions abounding in hair and sebaceous glands, like the face and nose. The skin heals over without a scar or retraction.

Annales de l'Institut Pasteur, Paris

June, XXIII, No. 6, pp. 441-512

30 *Kala Azar in Children. (Le kala azar infantile.) C. Nicolle. Commenced in No. 5.
31 *Serodiagnosis of Hydatid Cyst Disease. (Séro-diagnostic de l'échinococcose.) Weinberg.
32 Methods of Staining Common to Actinobacillosis, Actinomycosis and Botryomycosis. P. Chaussé.

30. **Kala Azar in Children Near the Mediterranean.**—Nicolle states that twelve cases have been reported of a special infection affecting exclusively children under the age of 6, and encountered to date only in Tunis and southern Italy. The symptoms include pallor, emaciation, enlargement of spleen and liver, fleeting, painless edemas and extremely irregular temperature presenting several maxima during the course of the day, uninfluenced by quinin. A tendency to hemorrhages and purpura is also frequent. The infection runs a long chronic course, and in all the cases differentiated during life the disease proved fatal. The parasite seems to be identical with that of kala azar in India, except that it attacks only children. In three other children now in good health a retrospective diagnosis of the infection has been made, and these cases demonstrate that the little patients may sometimes recover. His research on animals has shown that "infantile kala azar" is a natural infection of the dog. The parasite was found in 4 out of 222 dogs examined at Tunis, but the infection in dogs does not induce as characteristic a syndrome as in children.

31. **Seroreaction in Hydatid Cyst Disease.**—Weinberg reports from Metchnikoff's laboratory at Paris 52 cases in which the diagnosis was confirmed by the findings of the complement fixation test. The blood was found to contain specific antibodies against echinococci; in 26 of the 27 cases with positive findings the operation revealed the parasites. In one case with negative findings the operation revealed a hydatid cyst and the test, twenty days later, induced a positive reaction. The test in hydatid cyst disease seems to be even more constantly positive than the similar test for syphilis, and it is proving an important aid in the clinic. In one case the clinical signs suggested hydatid cyst, confirmed by the pronounced eosinophilia of 7.5 per cent., but the test applied on three occasions gave constantly negative findings. The stools were then examined and quantities of eggs of the trichocephalus were discovered, explaining the eosinophilia, and the operation revealed merely gall-bladder inflammation. In other cases with negative findings in both stools and serum, the supposed hydatid cyst proved to be a hemorrhagic cyst in the pancreas, or abscess in the bile duct. In one case with 10 per cent. eosinophilia the test was negative and the liver hard, but certain findings in the serum were similar to those that had been noted with cancer of the liver, and this proved to be the trouble in this case. In all the other negative cases the test added another element to sustain the dubious diagnosis of some other affection. Examination of 26 other patients who had been operated on for hydatid cysts years before showed the persistence of antibodies in a large proportion, and it was found that in all these positive cases the cyst had been opened, while in the negative it had been removed unopened.

Archives Générales de Chirurgie, Paris

June 25, III, No. 6, pp. 551-660

33 Epithelioma in Testicle of Wolffian Origin. G. Potel and L. Bruyant.
34 Fractures of the Astragalus with Displacement of the Fragments. P. Mauclaire and P. Petiteau.
35 How Long should Bed Rest be Imposed after Operations? (Durée du séjour au lit des opérés.) J. de Fourmestraux.

Archives Générales de Médecine, Paris

June, CC, No. 6, pp. 321-384

36 Leucocyte Balance in the Bronchopneumonia of the Elderly. (La leucocytose et l'équilibre leucocytaire dans la bronchopneumonie des vieillards.) G. Etienne and M. Perrin.
37 Spring-knee. (Etude du genou à ressort.) Bar and Bertein.

Bulletin de l'Académie de Médecine, Paris

June 29, LXXIII, No. 26, pp. 689-720

38 *Diagnostic Importance of Antitryptic Power of Blood Serum (Pouvoir antitryptique du sérum sanguin et sa valeur diagnostique.) F. Widal and S. de Poggenpohl.
39 *Dysenteric Liver Abscess. (Abcès du foie dysentérique nostras.) E. Boinet.

38. **Diagnostic Importance of Antitryptic Power of Blood Serum.**—Widal obtained positive results in 13 out of 14 cases of cancer even when there was no cachexia, as in one case of epithelioma of the upper lip in which the antitryptic index was 1 to 7. In the one negative case the test was made on a moribund patient. In 8 cases suspected of cancer the reaction was negative, and the course of the cases confirmed these findings, the affection proving to be a cyst in the pancreas, tuberculous pleurisy, chronic mammitis, gumma of the lip, nervous spasm of the esophagus or gastric ulcer. This makes 176

cases on record in which this test has been applied, with positive findings in 91.4 per cent. In 64 other chronic affections—lobar pneumonia, typhoid fever, tuberculosis or nephritis—the reaction was positive in 11 per cent. The high antitryptic index in the 3 cases of typhoid fever may have been connected with the complications observed in these cases.

39. **Dysenteric Abscess of the Liver.**—Boinet describes twenty-one cases of abscess in the liver in France presenting the same characteristics as a tropical abscess. It may follow a mild dysentery which may not have attracted attention, and it may run a latent course simulating a tuberculous process in the lungs, pneumonia, pleurisy or a suppurative hydatid cyst. In acute suppurative hepatitis with multiple abscesses, or an abscess with necrosis, the general symptoms may suggest typhoid fever or severe jaundice and the actual abscess be overlooked. The principal complications of these bacillary liver abscesses are adhesion between the focus or foci and the colon; perforation into the air passages or pleura; pus collecting below the diaphragm, multiple abscesses in the left lobe of the liver, and postoperative bile fistula.

Revue de Médecine, Paris

June, XXIX, No. 6, pp. 425-504

40 Digestive Orig[illegible] [illegible]ns. (Origine digestive des mal[illegible] [illegible]toire.) P. Londe.
41 Study of the [illegible] macroscopiques des glandes surrénales dans leurs états physio-pathologiques.) A. Sézary.
42 *Local Hemolytic Jau[illegible] [illegible] [illegible]aires par hémolyse dans [illegible] [illegible]sier.
43 Colloidal Metals in [illegible] des métaux colloidaux.) L. Bousquet and H. Roger. Commenced in No. 4.

42. See abstract 52 in THE JOURNAL, April 24, 1909, page 1368.

Presse Médicale, Paris

July 14, XVII, No. 56, pp. 497-504

44 *Congestive Edema at Apex Simulating Tuberculosis. (De quelques congestions-œdèmes pulmonaires localisées aux sommets des poumons simulant la tuberculose, et de quelques congestions pulmonaires péritüberculeuses.) G. Caussade and P. Queste.
45 Ascarides Simulating Gastric Ulcer. (Ascaridiose intestinale ayant simulé un ulcère de l'estomac.) R. Gaultier.

44. **Edematous Congestions at Apex Simulating Tuberculous Process.**—The edematous congestions to which Caussade refers occur in the course of kidney and heart disease, but the tuberculin tests are negative and no tuberculous lesions are discovered at autopsy, although during life auscultation findings suggested an advanced tuberculous lesion. Their true nature is revealed by their changing position at times and their complete subsidence sooner or later in some cases, although in others they may persist indefinitely unless special measures are directed against the congestion. Two typical cases are cited of these apical congestions in the course of chronic nephritis and two with chronic mitral or aortic incompetency. Recurring hemorrhage from the lungs in these latter cases corroborated the diagnosis of tuberculosis, but the subsidence of the apical signs demonstrated that the hemorrhagic tendency was due to the heart trouble and not to tuberculosis. In another case of mitral insufficiency and nephritis the auscultation findings and repeated hemoptysis suggested tuberculosis, but the lungs cleared up under treatment of the heart and kidney disease and the findings became normal, confirming the negative findings of the tuberculin tests. In a youth of 16 with chronic adhesive pericarditis the auscultation findings seemed to reveal the presence of a cavity in one lung, but autopsy showed merely intense congestion of the right apex with not a trace of tuberculosis. When the edematous congestion surrounds a true tuberculous lesion, differentiation is delicate but very important, as the tuberculous lesion may be minute, while the perituberculous is very extensive. Two examples are given of cases of this kind, the prognosis being favorable if the perituberculous congestion is found to be variable or fleeting. In one of this group the edematous congestion developed after influenza and severe tuberculosis was diagnosed, but the signs all vanished in time under revulsive measures, and two years later the young man passed a rigid physical examination for a government position. The signs and auscultation findings in each of the above eight cases are given in detail.

Semaine Médicale, Paris

July 21, XXIX, No. 29, pp. 337-348

46 Biologic Classification of Neuroses and Psychoses. M. Klippel.

Berliner klinische Wochenschrift

July 5, XLVI, No. 27, pp. 1245-1292

47 Pathologic Anatomy of Bilharzia Disease. Goebel.
48 Tumor in Frontal Brain Simulating Syndrome of Tumor in Posterior Cranial Fossa. (Ein Stirntumor unter dem klinischen Bild eines Tumors der hinteren Schädelgrube.) A. Ruckert.
49 *Hemolysis in Paroxysmal Hemoglobinuria. (Hämolyse bei der paroxysmalen Hämoglobinurie.) A. A. Hijmans van den Bergh.
50 Pathology of Secretion of Gastric Juice. (Zur Pathologie der [illegible] E. Schütz.
51 * [illegible] the Prostate. A. Rothschild.
52 * [illegible] didymitis. L. Waelsch.
53 *Modern Obstetrics. (Moderne Geburtshilfe in Klinik und Haus.) Puppel.
54 Report on Collective Appendicitis Enquiry at Berlin, 1907. [illegible] inischen Gesellschaft [illegible] des Jahres 1907.) [illegible]
55 *Medicolegal Certificates. (Darstellungsweise gerichtsärztlicher Gutachten.) H. Marx.

49. **Carbon Dioxid Responsible for Hemolysis in Paroxysmal Hemoglobinuria.**—Bergh announces that study of the blood of three patients with paroxysmal hemoglobinuria has shown that carbon dioxid has much to do with the hemolysis. A thin layer of the defibrinated blood of these patients in a shallow dish placed for two hours in a glass bell filled with carbon dioxid showed pronounced hemolysis when the temperature was reduced a few degrees below ordinary body temperature. There was no hemolysis when the body temperature was maintained, and no hemolysis in numerous other tests with blood from healthy persons at any temperature. This research was suggested by Hamburger's statement that the resistance of normal red corpuscles to dilute salt solution is materially reduced under the influence of carbon dioxid.

51. **Etiology of Enlargement of the Prostate.**—Rothschild gives a number of illustrations to sustain his assertions that the enlargement of the prostate is the result of a chronic inflammation, the inflammatory foci lying around the mouths of the excretory ducts and thus causing stenosis or occlusion of these ducts with retention of the catarrhal secretion, dilatation and cystic degeneration, the process and results similar to those of retention in any glandular organ. The chronic prostatitis in question is a very long drawn out process, extending over years and decades, and it may be not only clinically latent, but the naked eye may be unable to detect histologic changes in the gland. The microscope, however, will reveal the signs of submucous chronic inflammation in the posterior urethra and of catarrhal proliferation and desquamation of the epithelium in the follicular pouches and outlets of the prostate. Some prostates contain less glandular substance than others, and the effect of the inflammation is felt less on this account. The findings reported confirm the lack of any rational basis for treatment of enlargement of the prostate by castration or severing of the vas deferens or ligation of afferent arteries—all of which are now abandoned. But the anatomic findings suggest the importance of systematic treatment of chronic prostatitis in prophylaxis of hypertrophy of the organ. This is the task of the general practitioner, and he should not fail to institute a three or four weeks' course of massage two or three times a year for several years after subsidence of the acute phase of prostatitis. This will counteract the stagnation of the secretions and development of deposits of round cells at different points, while it will promote the circulation through the blood vessels and lymphatics and favor absorption of inflammatory infiltrates. Of course, after fibrous connective tissue processes have developed, massage is no longer effectual. It may be usefully supplemented by other measures to promote absorption, such as brine and mud baths, etc.

52. **Sympathetic Epididymitis.**—Waelsch reports a case of frequently recurring pains in the scrotum evidently from acute congestion in a chronically inflamed organ, the result of reflex disturbances in the circulation, sometimes from emotional influences. Tough infiltration in the epididymis and vas can be palpated, but tuberculosis, gonorrhea and syphilis can be excluded in this case; a tendency to internal inguinal hernia on each side can not be regarded as responsible for the recur-

ring pains. The patient was a man of 31 and no benefit had been derived from the most varied treatment during the five years since the first pains were observed; the attacks of pain had grown constantly more severe and the intervals shorter, except that some attenuation had been observed quite recently under the bromids. Waelsch also reports a case of what he calls erotic epididymitis, a form of the sympathetic affection in which the painful congestion is the result of erotic excitement. The congestion subsided under rest and moist heat, but an infiltration still persists.

53. **Obstetrics in the Clinic and the Home.**—Puppel pleads for better instruction of the general practitioner in the indications for obstetric operations and for expectant management of childbirth in the dubious cases. He is convinced that greater familiarity with the use of the inflatable bag will render operative measures unnecessary in many more cases.

55. **Medicolegal Certificates.**—Among the various points of Marx's advice is the warning that each certificate should be made complete, that is, the questions of the judge or other authority should be given along with the answers, and the latter should be couched in language to correspond, so that any third lay party reading the certificate at any time would be able to understand the whole matter and judge it for himself. Another important point is for the physician to weigh the morbid state in comparison with the normal capacity of the individual. The third factor of importance in making out the certificate is the medical judgment of the single event, the accident, etc., assumed to be responsible for the condition. Marx warns further against positive assertions, urging the use of "probably," "possibly" or "nothing conflicts with the assumption that," to modify the positive statements. It is especially necessary to avoid such assertions as "X is mentally sound" as the verdict after a single office examination Such a positive assertion is permissible only after a long course of observation; the physician should state only that he had not been able to detect any signs of mental unsoundness during his examination.

Deutsche medizinische Wochenschrift, Berlin

July 8, XXXV, No. 27, pp. 1177-1216

56 *Opsonins and Pulmonary Tuberculosis. M. Wolff and H. Reiter.
57 Complement Binding in Relapsing Fever. (Komplementbindung bei Typhus recurrens.) S. Korschun and Leibfreid.
58 *Serotherapy of Incipient Senile Cataract. (Ueber Römers spezifische Therapie des beginnenden Altersstars.) O. Schirmer.
59 *Serum Reaction in the Insane. (Ueber die Much-Holzmannsche Kobragiftreaktion im Blute Geisteskranker.) A. H. Hübner and H. Selter.
60 Ileus after Subcutaneous Trauma. A. Schönwerth.
61 Syphiloma in Rabbit Testicle after Inoculation. (Hodensyphilome bei Kaninchen nach Impfung mit syphilitischem Virus.) D. Mezincescu.
62 *Improved Quantitative Test for Sugar in the Urine. (Verfahren zur quantitativen Bestimmung des Harnzuckers.) H. Citron.
63 *Spectroscopic Test for Occult Blood in Stool. (Neue spektroskopische hämochromogene Blutprobe der Faeces.) C. Karoly
64 Improved Joint for Artificial Knee. (Kniegelenk für künstliche Beine.) O. Vulpius.

56. **Opsonins and Pulmonary Tuberculosis.**—Wolff and Reiter are in charge of the policlinic for lung affections at Berlin, and they state that the opsonic index ranks just below the subcutaneous injection of tuberculin as the most delicate and reliable aid for diagnosis of tuberculosis. The opsonic index in health ranges from 0.85 to 1.15; a permanently low index suggests a chronic, possible stationary, tuberculous process, while a very low fluctuating index indicates progressive infection. They regard the ocular reaction as the most unreliable of the tubercle reactions; the statement that it indicates only active tuberculosis has not been confirmed by their experience.

58 **Organ Treatment of Cataract.**—Schirmer's experiments failed to confirm Römer's hypothesis in regard to the absorption of lens substance and its therapeutic reaction. He cites Königshöfer's negative experiences over ten years ago with such organotherapy. Börnstein has observed fatal anaphylaxis in rabbits fed with an alien albumin, which suggests the necessity for caution with these organ extracts.

59. **The Alleged Specific Reaction in the Blood of the Insane.**—Hübner and Selter have applied the cobra toxin hemolytic test in 82 cases, but their findings differ materially from those reported by Much. They were positive in less than 50 per cent. of the cases of dementia præcox and manic depressive insanity, while they proved positive also in a number of psychoses, neuroses and in organic brain and spinal cord affections.

62. **Improved Quantitative Test for Sugar in Urine.**—Citron regards the technic described as marked progress; even the novice is able to read off the percentage of sugar in the urine in a few minutes with automatic accuracy, and only a single dish is required for the test, a single heating, and no filtering. It is a modification of the iodometric modification of Fehling's quantitative test. The iodometric method consists in heating the urine with Fehling's solution, filtering, treating with sulphuric acid and potassium iodid, and titrating the iodin with sodium thiosulphate and starch. It is based on the principle that the sugar precipitates a proportionate amount of the copper in the Fehling solution and that the precipitated cuprous oxid remains behind on the filter. By the action of the sulphuric acid and potassium iodid on the filtrate, one atom of iodin is liberated for each molecule of the copper sulphate. The tedious decolorization of the Fehling test is avoided, and the iodin reaction in its place is much plainer. Only the copper still in solution—not that already reduced—induces the liberation of the iodin, and the cuprous oxid becomes quantitatively transformed into cuprous iodid. Ten c.c. of the potassium-sodium tartrate solution are placed in a porcelain dish and 10 c.c. of the copper solution are measured out and nearly all is added, the mixture thoroughly stirred. Then exactly 1 c.c. of urine is added, and when all is dissolved, the mixture is heated over a small flame for a minute and a half, to boiling, and then cooled by placing the dish in a vessel of cold water. (While it is cooling the starch solution is prepared.) Then 4 c.c. of a 25 per cent. solution of sulphuric acid are added, when a thick, viscid precipitate is at once thrown down. The solution of sodium thiosulphate is then added from a burette graduated for percentages, a line at a time, and a few c.c. of the starch solution are added. The fluid then turns deep blue or possibly a little more of the sulphuric acid solution and starch solution may be required. More of the thiosulphate solution is then added, a line at a time, until the fluid turns milk white and remains so even when it is stirred. The rest of the copper solution is then added and the rinsing water. If the fluid still remains white the percentage line on the burette is the index of the proportion of sugar in the urine. If a blue tint returns, more of the sodium thiosulphate is added, drop by drop, until a permanent milky tint results. Citron uses a special iodometric burette graduated for urine percentages and a special pipette graduated for 1 c.c. of urine, used with a syringe with a capacity of 2 c.c. The solutions used are: *a*, 34.639 gm. of copper sulphate dissolved in 500 gm. distilled water, to which 1 c.c. of sulphuric acid is added to prevent formation of copper carbonate; *b*, 173 gm. potassium-sodium tartrate, 50 gm. sodium hydroxid and 100 gm. potassium iodid dissolved in 500 c.c. water; *c*, a one-fifth normal solution of sodium thiosulphate containing also 0.1 per cent. sodium arsenate to make it keep better; *d*, a 25 per cent. solution of sulphuric acid, and *e*, the starch solution which he makes by dissolving in half a reagent glass of water a small piece, the size of a hazel nut, of a paste preparation used by photographers. The starch solution is heated to boiling and then cooled.

63. **New Spectroscopic Test for Occult Blood in the Feces.**—Karoly uses pyridin and ammonium sulphid for the test; the reduction is so complete that the test is ten times as sensitive as other spectroscopic methods. The feces are washed with ether and filtered; the residue is extracted with concentrated acetic acid and 0.5 c.c. are mixed with 1 c.c. pyridin; then from 1 to 3 drops of the ammonium sulphid are added. The fluid is limpid and gives the spectrum for hemochromogen. The test is a little less sensitive than the guaiac and aloin test, but more so than the benzidin test. These other tests can be applied for control, if desired, with some of the acetic acid extract.

Fortschritte der Medizin, Leipsic

June 10, XXVII, No. 16, pp. 593-640

65 Movable Cecum. (Coecum mobile.) H. Klose.

June 30, No. 18, pp. 673-704

66 *Fever and Its Treatment. (Fieber und Fieberbehandlung.) L. Lichtwitz. Commenced in No. 17.

66. **Treatment of Fever.**—Lichtwitz reviews the history of the management of fever as it has varied with the prevailing conceptions of the nature of the high temperature in disease, and outlines the present accepted treatment. This is based on the conception that fever is a salutary reaction on the part of the organism, but that, like all such processes in nature, the reaction may be excessive and overshoot the mark. It is the physician's task, therefore, to watch over the fever, doing nothing if all is going well, but ready at any moment to intervene to keep the salutary reaction within due bounds. If the patient's consciousness is disturbed, the breathing becoming more superficial, the assimilation of nourishment suffering, then gentle antipyretic measures are in order. For this the specific drugs should be given the preference, quinin in malaria, salicylic acid in acute rheumatism, and in other fevers mild external applications of water, with more energetic measures in case of excessively high fever, with digitalis, camphor and caffein in case of collapse.

Jahrbuch für Kinderheilkunde, Berlin

July, LXX, No. 1, pp. 1-122

67 *Lactic Acid and General Metabolism in Infants. (Milchsäure und Säuglingsstoffwechsel.) M. Klotz.
68 *Congenital Tuberculosis. H. Rietschel.
69 Wet Nurses in Ancient Alexandria. (Die Amme im alten Alexandrien.) W. Schubert.

67. **Lactic Acid and General Metabolism in Infants.**—Klotz has found that small amounts of lactic acid, not more than 1 or 1.5 gm., seem to reduce saponification and promote the metabolism in general when administered to infants. The metabolic findings in six are tabulated in detail; some of the infants were healthy and others recovering from some acute gastrointestinal disturbance. Larger doses render the metabolism more sluggish.

68. **Congenital Tuberculosis.**—Rietschel relates the particulars of a case in which the physician delivered the child of a woman of 30 in advanced tuberculosis, wrapped it in a towel and placed it on a bed ten feet from the mother. In twenty minutes it was bathed in an adjoining room by the nurse who had arrived too late for the birth. The child was then taken at once to a foundlings' home, where it was received before it was forty-five minutes old. There were no signs of tuberculous infection at first, but they developed after a month or so, and the child died of generalized tuberculosis at the fourth month. Sitzenfrey has reported two similar cases in which infection from the mother after birth seems positively excluded, and yet generalized tuberculosis developed in from three to six months. Rietschel is inclined to attribute the infection to contamination during the stress of delivery, intrapartum infection. As young infants are unable to develop antibodies, such infection during birth is almost inevitably fatal, whether the child remains with its mother or not. When the tuberculosis does not develop until after the sixth month, the infection was probably acquired after birth. He is convinced that the intrapartum infection is much more common than generally recognized, and that there are no grounds for assuming a latency of the tubercle bacilli in the infant organism, which is one of the premises of Behring's theory of tuberculous infection in early infancy.

Münchener medizinische Wochenschrift

July 6, LVI, No. 27, pp. 1361-1408

70 *Clinical Importance of [illegible] psin in the Blood. (Bedeutung d[illegible] im Blute.) L. Jacob. Id. in Gyn[illegible]
71 *Special Reaction in Blood in Umbilical Cord. (Besondere Reaktion im [illegible] orener.) F. Bauer.
72 *Etiology of [illegible] I. Schneider.
73 *Trigeminal [illegible] P. Preiswerk.
74 *Diagnosis of [illegible] Blood. (Zur Diagnose der Bleivergiftung aus dem Blute.) A. Trautmann.
75 Simple Office [illegible] Salt and Urea Content of Urine. [illegible] Sprechzimmer den Salz- und den [illegible] feststellen?) Wunder.
76 Treatment [illegible] ativen Behandlung der Knochenb[illegible] [illegible]

70. **Antitrypsin Index in the Blood.**—Jacob has been applying the antitrypsin test in 100 cases of various affections at Moritz's clinic at Strasburg. The findings show that the proportion of antitryptic ferment in the blood is much increased in a number of different morbid conditions. Constant in cachexia, it is found also in all conditions accompanied by changes in the white corpuscles and also in some cases without these findings. The reaction occurs in too many conditions to be regarded as of any importance for differentiation. Becker reports from Veit's clinic the findings in 135 gynecologic cases. The reaction was positive with carcinoma and also with anemia, chronic septic processes and also after delivery. The research at both clinics was with the Fuld technic.

71. **Serum Reaction in the Insane and in the New-Born.**—Bauer has found the same reaction which Much found in the insane and called the "psychoreaction," in the blood in the umbilical cord of 14 out of 17 infants examined, while there was no trace of the reaction with the serum of 25 older children.

72. **Etiology of Ophthalmic Hemicrania.**—Schneider has encountered a typical case in which the attacks followed some exposure to cold or to infection. If the findings in this case are confirmed by others, the symptoms can be ascribed to the action of toxins—not a specific infection, but a specific reaction on the part of predisposed individuals to "catching cold," etc.

73. **Trigeminal Neuralgia of Dental Origin.**—Preiswerk reports two cases in men in which non-erupted teeth caused a syndrome simulating severe trigeminal neuralgia.

74. **Diagnosis of Lead Poisoning from the Blood.**—Trautmann has been comparing the blood picture in 233 workers with lead, 100 anemic patients and 100 healthy individuals. The basophile granular red corpuscles were found in much larger proportions in the workers on lead, while in the anemic and the healthy they were below 100 per million. When over 100 per million are found in persons exposed to lead poisoning the latter is almost certain. In forensic cases he suggests 300 per million as the limit. Examination of the blood is thus able to reveal lead poisoning in its incipiency.

Therapeutische Monatshefte, Berlin

July, XXIII, No. 7, pp. 353-408

77 *Treatment of Gastric Ulcer with Ferric Chlorid-Gelatin. (Behandlung des runden Magengeschwürs mit Eisenchlorid-Gelatine.) Bourget.
78 *Chronic Gastrointe[illegible] Chronic Dyspeptic Diarrhea in Chi[illegible] agen-Darmdyspepsie und chronische [illegible] des Kindesalters.) R. Schütz.
79 Milk o[illegible] ts in Treatment of Exophthalmic [illegible] and G. Rochaz.
80 Treatm[illegible] the Hair. (Behandlung des Haarausfalls.) Hübner.
81 *Rubber Gloves in Obstetrics. (Die Gummihandschuhe in der Geburtshilfe des praktischen Arztes.) Mende.
82 Campaign against Malaria in Europe. L. Sofer.
83 *Chloral as Deodorizer in Gangrene of the Lungs. A. Siegmund. Id. Langgaard.

77. **Ferric Chlorid-Gelatin Treatment of Gastric Ulcer.**—Bourget states that he has been constantly successful with his ferric chlorid method of treating round gastric ulcer, the ulcer promptly healing in fourteen days or less, and he has never witnessed any mishaps from it in nine years of experience. The objection has been made to the method that it requires the use of a stomach tube which some shrink from using with gastric ulcer, but he has never had any trouble from this cause, although he has used the stomach tube thousands of times. Nevertheless, he has modified his technic so as to dispense with the use of the stomach tube for introducing the 1 per cent. solution of ferric chlorid. This is accomplished by mixing the chlorid with a gelatin. He dissolves with gentle heat 100 parts gelatin in 100 parts water and 100 parts glycerin, and when fully dissolved adds 50 parts of liquid ferric chlorid. The mixture is warmed and stirred to a homogeneous mass and cooled in the form of dice, each containing 1 c.c. He allows the ulcer patient at 8 a. m. some milk and zwieback; at 10 a. m. one of the chlorid tablets is taken and in half an hour from 100 to 150 gm. of an alkaline drink. This is made by dissolving in 1 liter of cold water one of ten powders made from 8 gm. sodium bicarbonate, 4 gm. sodium phosphate and 2 gm. sodium sulphate. The noon meal is rice cooked in milk, followed at 3 p. m. with another chlorid gelatin tablet, followed half an hour later with 150 gm. of the alkaline drink. At 6 p. m. rice, at 9 another chlorid tablet and at 10 p. m. 150 gm. of the alkaline

water. The pains rapidly subside and healing is soon complete, he says, under this treatment. In the severe cases with much hemorrhage he rinses out the stomach at once with the 1 per cent. ferric chlorid solution and then follows with the gelatin. In every instance the hemorrhagic tendency was promptly arrested, and he has never had a recurrence of bleeding. Test tube experiments have shown that the ferric chlorid-gelatin tablets are digested by the gastric juice. The chlorid cauterizes the ulcer and the iron helps to restore the hemoglobin lost in the hemorrhage.

78. **Chronic Diarrhea in Children.**—Schütz refers to the diarrhea in children, induced by imperfectly digested food, "dyspeptic diarrhea;" the undigested food passes into the intestines in such form that it sets up irritation. The diarrhea is the admirable defensive reaction on the part of the bowel, and no attempt should be made to check it with drugs, as they do not remove the cause. Treatment should be directed against the causal digestive disturbances and the diet regulated to exclude such articles as examination of the stool shows to be the ones which the stomach or intestines are unable to cope with and normally digest. The food should be such as leaves no waste, and any food which escapes normal digestion becomes useless waste and ballast which tax the bowel and irritate it. The aim should be to establish the balance between the functional capacity of the gastrointestinal tract and the diet, such a balance as adults find on an ordinary mixed diet. His experience with fifteen children presenting typical examples of this dyspeptic diarrhea has demonstrated the importance of regulation of the diet based on examination of the stool so as to exclude from the diet such articles as are seen to escape the action of the digestive processes. Starch insufficiency usually righted itself first in his cases, and he never found it necessary to exclude all carbohydrates. A strictly fluid diet may be necessary in the severer cases, and this is one of the most potent means of conquering diarrhea, he emphasizes, no matter what the underlying disturbance. One child of 5 with severe starch and fat dyspepsia and diarrhea for years gained about 10 pounds in six weeks when the diet was regulated along these lines. Some of the children had severe relapses whenever they attempted to return to ordinary diet. They had to do without vegetables and butter for two years, and even at the end of four years an attempt to eat coarse bread, raw fruit and unsieved vegetables caused the return of the dyspeptic diarrhea. Not until after the fifth year could they eat ordinary mixed diet, but they thrived on the restricted diet and weighed even more than the average for their years. Lavage of stomach and bowel is a valuable adjuvant in many cases.

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Wiener klinische Wochenschrift, Vienna

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112. Operative Treatment of Gastric and Duodenal Ulcers.—Dahlgren's monograph of 172 pages discusses a number of points of interest from his own and others' experience, with summaries of 88 case histories. Among the points emphasized is the necessity for excision of a "callous" ulcer and duodenal ulcer as the only means of cure and prevention of cancerous degeneration. He is convinced that gastroptosis is in certain cases the primary pathologic factor and that it is amenable to gastropexy. A laparotomy may be indicated even for uncomplicated gastroptosis without ulcer, much dilatation or cicatricial stenosis if symptoms indicate a kinking of the bowel and internal or bandage treatment has failed to relieve. Gastropexy is preferable to gastrojejunostomy in such cases, as it avoids the liability to the vicious circle and peptic ulcer. He does not approve of jejunostomy for ulcer except for perforated ulcer with stenosis and extreme debility, rendering a gastrojejunostomy too risky. Gastrostomy is preferable, but he would restrict it to the second place. In case of postoperative paralysis of the bowel, he empties the intestine by an incision, milking out the contents until it is so empty that it subsides spontaneously into the abdomen as the lips of the wound are held apart. To prevent adhesions he pours a large quantity of sterile oil into the abdominal cavity afterward, having found this very effectual. The abdominal incision must be made large enough to enable the mesentery to be drawn out with the intestine without incarceration, and the intestines must be kept constantly moist and warm with hot compresses and salt solution repeatedly poured over them.

113. Rectal Sarcoma.—Key has encountered four cases and cites one from Ekehorn's practice; the patients mostly succumb to recurrence in a few months after operation.

Norsk Magazin for Lægevidenskaben, Christiania

July, LXX, No. 7, pp. 571-664

114 Abnormal Reaction to Diphtheria Antitoxin. (Anafylaktisk shock.) A. de Besche.
115 Research on Blood, Blood Pressure and Changes in Pulse during Application of Suction Mask. (Undersøgelser over blodblodtryk- og pulsforandringer under Kuhn's lungesugemaske.) A. Tillisch.
116 Height of Norwegians. (Om der nørske folks legemshoide.) H. Daae.

Ugeskrift for Læger, Copenhagen

May 27, LXXI, No. 21, pp. 557-598

117 *A Few Operations on the Kidneys. (Nogle Nyreoperationer.) H. Kaarsberg.

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112 *Surgical Treatment of Gastric and Duodenal Ulcer. (Beiträge zur Chirurgie des Magen- und Duodenalgeschwürs.) K. Dahlgren. Commenced in No. 2.
113 *Sarcoma of the Rectum. (Zur Kasuistik des Rektalsarkoms.) E. Key.

112. Operative Treatment of Gastric and Duodenal Ulcers.—Dahlgren's monograph of 172 pages discusses a number of points of interest from his own and others' experience, with summaries of 88 case histories. Among the points emphasized is the necessity for excision of a "callous" ulcer and duodenal ulcer as the only means of cure and prevention of cancerous degeneration. He is convinced that gastroptosis is in certain cases the primary pathologic factor and that it is amenable to gastropexy. A laparotomy may be indicated even for uncomplicated gastroptosis without ulcer, much dilatation or cicatricial stenosis if symptoms indicate a kinking of the bowel and internal or bandage treatment has failed to relieve. Gastropexy is preferable to gastrojejunostomy in such cases, as it avoids the liability to the vicious circle and peptic ulcer. He does not approve of jejunostomy for ulcer except for perforated ulcer with stenosis and extreme debility, rendering a gastrojejunostomy too risky. Gastrostomy is preferable, but he would restrict it to the second place. In case of postoperative paralysis of the bowel, he empties the intestine by an incision, milking out the contents until it is so empty that it subsides spontaneously into the abdomen as the lips of the wound are held apart. To prevent adhesions he pours a large quantity of sterile oil into the abdominal cavity afterward, having found this very effectual. The abdominal incision must be made large enough to enable the mesentery to be drawn out with the intestine without incarceration, and the intestines must be kept constantly moist and warm with hot compresses and salt solution repeatedly poured over them.

113. Rectal Sarcoma.—Key has encountered four cases and cites one from Ekehorn's practice; the patients mostly succumb to recurrence in a few months after operation.

Norsk Magazin for Lægevidenskaben, Christiania

July, LXX, No. 7, pp. 571-664

114 Abnormal Reaction to Diphtheria Antitoxin. (Anafylaktisk shock.) A. de Besche.
115 Research on Blood, Blood Pressure and Changes in Pulse during Application of Suction Mask. (Undersøgelser over blodblodtryk- og pulsforandringer under Kuhn's lungesugemaske.) A. Tillisch.
116 Height of Norwegians. (Om der nørske folks legemshoide.) H. Daae.

Ugeskrift for Læger, Copenhagen

May 27, LXXI, No. 21, pp. 557-598

117 *A Few Operations on the Kidneys. (Nogle Nyreoperationer.) H. Kaarsberg.

June 3, No. 22, pp. 599-628

118 Value and Composition of Certain New Remedies, Etc. (Værdien og Sammensætningen af nogle Lægemidler og Arkana.) H. P. Madsen.

July 1, No. 26, pp. 713-750

119 **Early Differentiation of Pulmonary Tuberculosis. (Bidrag* til Lungetuberkulosens tidlige Klinik.) C. A. Blume. Commenced in No. 23.

117. Operations on the Kidneys.—Kaarsberg reports two cases of trauma of the kidneys in one of which the lower part of the kidney was torn as if cut off with a dull knife and yet there was no trace of injury of the skin. The man had fallen under a horse. In another case nephrotomy was done on the kidney left after nephrectomy; complete recovery followed removal of a few calculi. In a fourth case the patient succumbed to heart failure after nephrectomy in puerperal pyonephrosis. This last experience has confirmed him in the view that surgical treatment should be undertaken earlier in such cases.

119. Early Differentiation of Tuberculosis.—Blume analyzes his experiences with 110 cases of pulmonary tuberculosis in adults in which the diagnosis was made by discovery of tubercle bacilli in the laryngeal secretion. The patients had little or no cough and irregular or no expectoration, and differentiation was possible only by examination of the laryngeal mucus. Only 1 bacillus was found in 8 cases, from 2 to 5 in 65, from 6 to 10 in 12, and from 50 to 100 in 3. The larynx was generally congested, but there were *no* subjective disturbances in the majority, merely a little hoarseness in a few. In 12 men and 12 women there were signs of anemia, and the general weakness first suggested tuberculosis; in 10 other men and 3 women pains in the chest were the first symptom, and at least 4 had been under treatment on this account for supposed rheumatism or gout. He discusses the anatomic origin of the pain, and cites some typical examples of each group. In a third group of 15 men and 20 women nervous and psychic symptoms predominated in the clinical picture of the incipient tuberculosis. The physical findings were negative or dubious, and the nervous symptoms were evidently of toxic origin; a course of tuberculin treatment cured these symptoms completely in some of the cases. The tuberculous process *may generate toxins* both during a progressive and a retrogressive course, as he shows by several examples. He agrees with the view that exophthalmic goiter may in certain cases be due to the tuberculous toxin, reporting a case in a man of 20 supposed to be suffering from gastric catarrh and exophthalmic goiter. Tubercle bacilli were discovered in the laryngeal secretion taken directly from the larynx, and treatment directed against the tuberculous infection had a favorable effect on both the stomach and the other affection. In a fourth group symptoms on the part of the stomach predominated in 9 men and 22 women, vomiting or paroxysmal pain, evidently the work of the tuberculous toxin causing arrosions, inflammation or hypersecretion. The experiences related with patients in this group throw light on many puzzling cases of stomach affections; gastrosuccorrhea under these circumstances may be a defensive reaction on the part of the stomach to the tuberculous toxin. He has witnessed marked benefit on the stomach symptoms in many cases from antituberculosis treatment. *He also calls attention to the combination* of the tuberculous toxin and the toxin from some other infection as liable to induce a stormy reaction on the part of the stomach. In one such case the patient, a man of 24, was taking the usual course of tuberculin treatment when suddenly symptoms developed suggesting perforation of the stomach, but subsiding as operative intervention was being considered, and explained by the onset of symptoms of follicular tonsillitis. The unsuspected incubation phase of the tonsillitis caused another infectious toxin to be superposed on the tuberculous toxin, the resulting syndrome deceptively simulating perforation of the stomach, although the pre-existing tuberculosis was known in this case. This intensive form of reaction may simulate croup, spasm of the pylorus, appendicitis and kidney colic, or the heart may feel the effect most prominently, with resulting transient tachycardia, or there may be vertigo or entire loss of consciousness. In one of his cases an annually recurring winter cough seemed to be vicariously substituted one year by kidney colics. Bladder colics were observed in one little girl.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the *courtesy of the sender. A selection will be made for review in the* interests of our readers and as space permits.

Jahresbericht über die Psychiatrische Klinik in Munchen, für 1906 und 1907. Paper. Pp. 183, with 4 illustrations. Price, 3.60 marks. München: J. F. Lehmanns Verlag, 1909.

Diathesis and Ocular Diseases. By A. Maitland Ramsey, M.D., Fellow of Faculty of Physicians and Surgeons, Glasgow. Cloth. Pp. 184, with 17 illustrations. Price, $2.00. New York: William Wood & Co., 1909.

Myeloische Metaplasie und fötale Blutbildung und deren Histogenese. Von Dr. med. Heinrich Fischer, Sanatorium "Untere Waid" bei St. Gallen (Schweiz). Paper. Pp. 140. Price, 4 marks. Berlin: Verlag von Julius Springer, 1909.

The Malarial Fevers, Hemoglobinuric Fever and the Blood Protozoa of Man. By Charles F. Craig, M.D., Captain, Medical *Corps, U. S. Army. Cloth. Pp. 477, with illustration. Price, $4.50.* New York: William Wood & Co., 1909.

History of Yellow Fever. By George Augustin, Assistant Secretary Louisiana State Medical Society. Cloth. Pp. 1194, with illustrations. Price, $6.00. New Orleans: Published for the Au*thor by Searcy & Pfaff, 724 Perdido Street, 1909.*

Clinical Lectures on Neurasthenia. By Thomas Dixon Savill, M.D., Physician to the West End Hospital for Diseases of the Nervous System, Welbeck Street, London. Cloth. Pp. 226. Fourth Edition. Price, $2.00 net. New York: William Wood & Co.

Lectures on Hysteria and Allied Vasomotor Conditions. By Thomas Dixon Savill, M.D., Physician to the West End Hospital for Diseases of the Nervous System, Welbeck Street, London. Cloth. Pp. 262, with 21 illustrations. Price, $2.50 net. New York: William Wood & Co., 1909.

Arbeiten aus dem Pharmazeutischen Institut der Universität Berlin. Herausgegeben von Dr. H. Thoms, Professor und Direktor des pharmazeutischen Institutes der Universität, Berlin. Vol. VI. Comprising the work for 1908. Cloth. Pp. 304, with 4 illustrations. Berlin: Urban and Schwarzenberg, 1909.

Principles of Surgery. By N. Senn, M.D., Ph.D., LL.D., C.M., Late Professor of Surgery, University of Chicago. Fourth Edition. Revised by E. J. Senn, M.D., Formerly Associate Professor of Surgery in Rush Medical College, and E. Friend, M.D., Instructor of Surgery in Rush Medical College. Cloth. Pp. 706, with 231 illustrations. Price, $5.00, net. Philadelphia: F. A. Davis Co., 1909.

Gynecology. Edited by E. C. Dudley, A.M., M.D., Professor of Gynecology, Northwestern University Medical School, and C. von Bachellé, M.S., M.D., Assistant Professor of Obstetrics, Chicago Polyclinic and College of Physicians and Surgeons. Vol. IV. The Practical Medicine Series. Under the General Editorial Charge of G. P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Cloth. Pp. 225. Price, $1.25. Chicago: The Year Book Publishers, 1909.

The Practice of Anesthetics. By Rowland W. Collum, L.R.C.P., M.R.C.S., Anesthetist to St. Mary's Hospital, Paddington, and General Surgical Technique, by H. M. W. Gray, M.B., C.M., F.R.S.C., Surgeon and Lecturer on Clinical Surgery, Royal Infirmary, Aberdeen. Edited by James Cantlie, M.A., M.B., C.M., F.R.C.S., Surgeon Seamen's Hospital Society. The Medico-Chirurgical Series No. 1. Cloth. Pp. 382, with 39 illustrations. Price, $3.00 net. New York: William Wood & Co.

New Patents

Recent Patents of Interest to Physicians

926462.	Bath and complexion brush. W. R. Blowers, Toronto, Ont., Canada.
926384.	Electrotherapeutic apparatus. B. Y. Boyd, Chicago.
926245.	Massage instrument. W. H. Coon, Rochester, N. Y.
926103.	Bed pan. J. M. Crater, New Germantown, N. J.
926197.	Water-bag syringe. G. E. Kim, Pittsburg, Pa.
926579.	Operating table. J. Laughlin, Ledyard, Iowa.
926671.	Respirator. W. F. Merryman, Denver.
926280.	*Preparing concentrated hydrated magnesia. W. S. Morrison*, Oakland, Cal.
927125.	Massaging device. K. Davis, Wilkes-Barre, Pa.
927132.	Disinfectant holder. P. Duenwald, Irvington, N. J.
927135.	Making acetate of lime. R. W. Erwin, St. Louis.
926993.	Thermometer. R. W. Mattox, West Tocoi, Fla.
926999.	Pr [illegible] from keratin, C. Neuberg, [illegible]
926960.	Sy [illegible] N. J.
927278.	Water-purifying apparatus. G. Pfeiffer, Jr., Merchantville, N. J.
926961.	Disinfectant apparatus. F. D. Raforth, Dubuque, Iowa.
927007.	Medicine timer. A. J. Scritchfield, Janesville, Wis.
927629.	Vapor bath apparatus. B. Andersen, Kansas City, Kans.
927764.	Sterilizer. R. P. Barnstead, Boston.
927519.	Ozone-generator. T. Friedlander, Chicago.
928038.	Atomizing solid medicaments. G. Fusch, Hanover, Germany.
927785.	Knee warmer. D. L. Galbraith, Bay City, Mich.
928043.	Electrical vibrator. M. K. Golden, San Francisco.
927786.	Massage tool. H. A. Grass, Chicago.
927531.	Toilet chair. W. F. Hedstrom, Los Angeles, Cal.
928051.	Invalid's chair. E. E. Higgins, St. Paul, Minn.
927973.	Knee-joint for artificial limbs. J. H. Jepson, Minneapolis.
927575.	Spring-top powder box. G. F. Miller, Brooklyn.
927881.	Method of and apparatus for atomizing, etc. A. Sala, Mexico, Mexico.
928011.	*Surgical instrument.* W. A. Whitlock, Ukiah, Cal.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LIII CHICAGO, ILLINOIS, AUGUST 28, 1909 NUMBER 9

Address

THE SCOPE OF PREVENTIVE MEDICINE

CHAIRMAN'S ADDRESS BEFORE THE SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH OF THE AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, 1909.

J. H. WHITE, M.D.
Surgeon United States Public Health and Marine-Hospital Service
NEW ORLEANS

There is—there can be—no higher specialty in medicine than that for which this Section stands, and we must present this to the public in such unmistakable terms that full recognition shall be accorded both to the sanitarian and to the profession as a whole, for neither can stand alone, as I hope presently to show. It is sheer waste of ability and time for the members of this Section to tell each other what they already know, and even the general distribution of *new matter* by the pioneers of the Section can not, in the nature of things, be so broadly useful as the same character of work would be, and is, in our truly great medical Section. Our greatest function, it seems to me, lies in the fact that we are the connecting link between that great medical body which handles the vast majority of the diseases we would prevent and the general public, the victim of those diseases.

This being an undisputed fact, we should have in mind constantly the two duties which follow this fact as naturally as the day follows the night. We must impress on the public the vast import to them of preventive medicine; we must show them that health means wealth and happiness, to the first very frequently and to the last always a necessary adjuvant.

In last year's Address on Medicine Dr. Thayer very properly said that but for sanitation there could be no Panama Canal; and is it not equally a fact that but for the incessant labor of men poorly paid, or paid not at all, every aggregation of people calling itself a city, even in the temperate zone, would be a focus of endemic disease, and cities of a million inhabitants unspeakable pest-holes, while such as New York, London, Paris, Berlin could not exist?

So much for the value to mankind of our work. These facts are reasons strong enough to justify us, and we shall continue to push forward, always seeking better results, whether recognized or not, content to serve our people as best we may, leaving our reward to their own sense of justice—and oh, the pity of it!—to be so often rewarded by abuse.

We should, for the better advancement of our work, make every possible effort to place the utilitarian aspect of that work before our law-makers and insist that they at least appropriate as much for the protection of their wives and little ones as for that of their swine, cattle and poultry. They might justly have claimed in the past that we had not shown ability to protect them, but this can not be said now.

It is something more than accident that last year Burrell and Thayer in the general orations and Drs. Edsall, Evans, Hurty and others advocated a campaign of education of our people. Such coincidence of thought means that we are ourselves awake and shall awaken our people to their duty to themselves and shall make it plain to them that no man has a right so to keep his house or so to live his life in a civilized community as to jeopardize his neighbor's health or happiness. It means that *we* shall teach all our people that the duty of keeping clean in a physical sense is as high as that of moral cleanliness and a prerequisite to a justified claim of "civis Americanus sum."

The practitioner of medicine saves lives one at a *time, and right noble is his calling.* You save lives by thousands. Is it not infinitely wiser to prevent the pollution by sewage of a stream supplying a city of a million than to fight that pollution in the bodies of 10,000 innocent victims of filth, or even to attempt the repurification of 100,000,000 gallons of that filth-laden water every day? Is it not better far to prevent the pollution of our food, houses, vehicles and streets by tuberculosis than to spend millions on treatment and then see our loved ones die by tens of thousands?

Is it not cheaper to spend a hundred millions of dollars and rid our country of every anopheles and stegomyia than to see business wither at flood-tide under the blighting grip of yellow fever, and our kindred and friends perish from the pest, while malaria takes its yearly tribute of thousands of lives in our country and destroys earning power to the extent of probably $50,000,000 annually and perhaps double *that?*

Shall we not vaccinate all our people at a cost of 25 cents each rather than leave some hundreds to die annually and some other hundreds of thousands to be branded with scars, a living shame to the community?

All these things we must bring forcibly and clearly before our people, and to do this we must cultivate our relations with the family physicians. They are closer to the people than we can ever be, and if we arouse their activities we will assure our ends. We must keep in close touch with them, and, indeed, we should enlist as many of them in this Section as possible, because without their help we can do nothing, and without the presence of some of their brightest and best, which, I am thankful to say, we have, at these meetings, we can not keep in as intimate association with them as we must. Fortunately, many of these able men are directly interested in sanitary science and are part and parcel of this Section, thus giving us the very opportunity we seek and should gratefully embrace to further arouse their interest to create an epidemic of sanitary enthusiasm on their part.

We must enlist the interest of our brethren, the pediatrists and the internists and get them to see and know the pitfalls in the path of the women and children under their care. We must lead them to take enough interest to play the part which a good old gentleman of the old school contemptuously called "dry nurse to the family."

We must start with the little ones, and, after seeing that their mothers are instructed in the hygiene of food and clothing, remove the notion that the children must of necessity have measles, whooping-cough, etc., and the sooner the better, by showing them that these diseases are ideal foundations on which to build future woe in the shape of tuberculosis.

We must teach parents that the sanest weapon with which to fight tuberculosis in their offspring is a good, sound body in which every atom of resisting power is developed by robust health to its maximum efficiency, that the development of the child's physical well-being is as sacred a duty as the development of its mind or morals, and is indeed the only proper foundation for intellectual vigor; that the boy whom they fain would bring up to be the grand man of the future must have sound lungs, stomach, eyes, teeth, etc., and good muscular development to enable him to meet his competitors on equal terms; that only in a healthy child can they realize all their hopes.

We must follow this teaching throughout, enlisting the aid of all branches of the profession, encouraging with all our might the tendency toward supervision of eyes and mouth of public school children, and every other similar movement; holding up the hands of men like Evans, who would not be content with mortality statistics in tuberculosis, but wants to find the morbidity as well, in order that medicine may work its rightful end and heal the sick. Finally, there is another and a high duty before us—the duty of doing what we can toward bettering health administration all over the country.

The time has passed, if it ever existed, when by virtue solely of the degree of M.D. a man is fitted to assume the duties and vast responsibilities of health officer. Although unfortunate, it is too true that even with special education we can not be sure of the innate ability to apply the knowledge held. We can, at least, be sure that we are not doing anything so utterly absurd as we have been doing under the old system of appointment, with merit only as an accidental qualification.

It is undeniable that some of these round pegs in square holes have adjusted themselves to these important positions and have proved brilliant successes, but these cases are exceptional and only go as parallels to the fact that a brilliant soldier like Napoleon can occasionally be a brilliant law-giver, not at all indicating that any son of Mars can also rival Lycurgus.

Existing health bodies, national, state and municipal, must be upheld until they can be improved—mark you, not replaced, but improved. We are not and never will be successful radicals and the whole tendency of our people for two thousand years has been, not toward elimination and substitution, but toward amendment, first, last and always.

To this conservative trait we owe the stability of northern European and American governments and the vast sense of security resident in the breast of every citizen of these governments. Fifteen hundred years intervene between the Saxon *gau* and the New England town, and yet they are the same in all essentials. The villager has simply improved his individual status and the primal idea of all having a hand in the government remains the same.

Very slight, indeed, are the formal differences between the ideal health organizations and the existing bodies. A little change in the manner of making appointments; a little better training of personnel; a little fuller understanding by the public of what we seek; a little more care in filling the posts of gradually receding incompetents with well-drilled men, and the end is attained without friction or ill-feeling.

This way, as I see it, lies our destiny. Shall we follow it? Shall we make preventive medicine a very real power in the profession? Or shall we be content to consider it a side issue?

Original Articles

THE LIMITATIONS IN PUBLIC HEALTH ADMINISTRATION *

HENRY BIXBY HEMENWAY, A.M., M.D.
EVANSTON, ILL.

A potent cause of unsatisfactory results in public health work is found in the vague ideas often entertained among officials, private physicians and the people generally, relative to the powers and duties of health departments. There is often a clearer perception of the object to be attained than of the means to that end. Very few physicians have more than a hazy notion of the science of sanitation. Education in this line is emphatically lacking, and the importance of the subject is little recognized. The Council on Medical Education of the American Medical Association recommended that out of a course of 4,100 hours only 120, or less than 3 per cent., should be divided between this great subject and medical economics and medical jurisprudence. Considering the fact that this council speaks for the leading American medical schools, it is not strange that we find great ignorance among our professional brethren as to the objects to be sought, and the steps to be taken, in sanitation.

There is inherent in the Anglo-Saxon mind a love of liberty; but liberty is not license. Professor Burgess, in his "Comparative Constitutional Law," sets forth clearly and at some length the fact that true liberty is only found under a constitutional government, and that for this purpose government exists. Thus, in the fourteenth amendment to the Constitution of the United States, we find the provision that no state shall "deprive any person of life, liberty or property, without due process of law." Under military law this provision may be laid aside. Sometimes it is true that for sanitary reasons, as in the presence of a pestilence, it may be necessary to declare martial law, but such a process must be reserved for extreme necessity. It is repugnant to all our institutions. Arbitrary or autocratic methods in health administration arouse an opposition which defeats the object sought. The health official is not a despot, but a servant, whose duty it is to preserve the health of the community in conformity with the laws which have been properly enacted.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In the United States the national government has only such powers as were conferred on it by the people of the several states. Essentially the state is supreme, and there are reserved to it by the tenth amendment to the Constitution all those powers not given to the nation or prohibited by the Constitution to the state. The only authority of a sanitary nature which the nation has must be found in the regulation of commerce. We frequently hear the suggestion that the national government ought to pass a law regulating the practice of medicine, for example, so that the requirements might be uniform in all parts of the land; and to make transfers from state to state less troublesome. Though such a law might be desirable, as a practical fact it is at present impossible, for the simple reason that Congress has no power to pass such an act.

A similar problem is found in the preservation of interstate rivers and lakes from pollution. The people might, especially in the presence of an epidemic, permit the government to step in actively to purify a river, but its legal power might be very questionable. This power must rest somewhere; if not in the national government then it remains with the state. Through its power to regulate commerce the government has a degree of authority over navigable waters. It is, therefore, constantly spending large sums for the deepening of rivers and harbors. This leads to another practical problem of power and limitations. An act for the deepening of rivers usually provides that it be done by contract at the least possible expense to the government. The contractors who have been dredging the Chicago River have been dumping the slime and filth from the bottom of the river into the lake, and the water-supply of the city has been thereby threatened with contamination. The War Department, which has charge of the dredging, can not order the dredgings taken further into the lake, for that would increase the cost of the work. No national statute is violated by dumping near the cribs. Neither has the national government the power to pass such a law. It may, however, have inserted into the appropriation bill a provision governing such contracts, so that the contractor may be paid for the extra transportation, and under such conditions dumping near a crib might be a violation of contract.

There is another way by which this object may be gained. By the acts creating the Territory of Illinois and the State of Illinois, and by the constitutions of the state, the eastern boundary of the northern part of the state is the middle of Lake Michigan. By the law of the state (Chapter 34, Section 3) also, the jurisdiction of Cook and Lake counties extends to the midle of the lake, whereas (Chapter 24, Section 71) the jurisdiction of a city like Chicago extends over the waters of the lake only three miles beyond the limits of the city. Although Section 256 of Chapter 24 of the Revised Statutes of Illinois provides that: "The jurisdiction of such city, town or village to prevent or punish any pollution or injury to the stream or source of water for the supply of such water works shall extend ten miles beyond the corporate limits," we have the opinion of Attorney-General John W. Griggs to the following effect: "While an ordinance of the city of Chicago may, as to all persons subject to its jurisdiction, forbid the deposit of any heavy substance in the waters of Lake Michigan within eight miles of the shore in front of that city, it can not control or limit the power of Congress over the navigable waters of the United States, nor dictate where it shall or where it shall not deposit, within such waters, material removed in the improvement of one of its harbors." It will be noticed that Mr. Griggs' opinion is relative to the power of a city, not of a state. The power of the state is not there discussed. It is quite true, as Mr. Griggs states, that the proper "remedy is by appeal to the good sense, discretion, and fairness of the Secretary" (of War), for pacific measures may often attain the desired result more quickly than by a resort to force. As a basis of appeal, however, the law of the state should be more potent than that of the city, and in the light of such cases as Wilson vs. Blackbird Creek Company (2 Peters, 245) it would seem that in case of necessity action by the state might prevail in the courts, even against the national powers.

The Blackbird Creek Company, being so authorized by the State of Delaware, constructed a dam by which the navigation of the stream was interrupted. The primary object was to reclaim a marsh, thus increasing the value of the property, and to improve the health of the inhabitants. Wilson was the owner of a sloop, licensed and enrolled under United States statutes. He injured the dam, and, being sued by the company, he denied the right of the state thus to interfere with commerce. Chief Justice Marshall delivered the opinion sustaining the power of the state, although it "stops a navigable creek and must be supposed to abridge the rights of those who have been accustomed to use it." In Gilman vs. Philadelphia (3 Wallace's Rep., 713) the opinion of Mr. Justice Clifford, Wayne and Davis concurring, refers approvingly to the Blackbird Creek case, saying that it "treated the erection of the dam as one adapted to reclaim the adjacent marshes and as essential to the public health, and sustained the constitutionality of the law authorizing the erection, on the ground that was within the reserved police powers of the state." This expression is the more significant for the reason that this dissenting minority held that the Blackbird Creek case did not apply in the Philadelphia bridge case, because there was no question of sanitation involved in the erection of a bridge across the Schuylkill river. The majority of the court had upheld the powers of the state to erect such a bridge, basing their action on the Blackbird Creek decision.

When two constructions of a statute are possible, one of which is constitutional and the other not, we are bound to choose that which is. An act of Congress which refers to a regulation of commerce may be construed in harmony with the sanitary powers of the state; or, in line with the opinion of Mr. Griggs, above mentioned, as against, and superior to such sanitary control by the state. In the latter case Congress would in reality assume jurisdiction over sanitary matters which it does not possess. Such a construction would make the act unconstitutional, on the ground that Congress had exceeded its authority. We are forced, therefore, to reject a construction which makes the power to regulate commerce necessarily paramount to state sanitary statutes, and to accept the view that the state still has sanitary jurisdiction over the officers and agents of the national government.

Neither county nor state may do anything which would interfere with navigation without the consent of the War Department, but it is their manifest duty to protect their citizens by passing and enforcing suitable laws for the preservation of the purity of the water-supply, and such laws the nation is bound to respect.

> So far as the decisions of the ultimate tribunal on constitutional interpretation now stand, the following propositions seem to be established: (1) The several states have power to pass laws regulating the internal police of their own territories, which territories include navigable rivers and harbors, as well as unnavigable streams, and the land itself. These police measures . . . are simply a part of the general system by which each state endeavors to protect the good morals, lives, health, persons and property of its inhabitants.[1]

It is generally admitted that quarantine regulations are controlled by the states. I have found no case to the contrary. As Pomeroy says:[1]

> This entire class of statutes establishing police regulations is within the purview of state legislation, whether Congress has legislated for the same or similar purposes or not. Among them may be mentioned laws establishing quarantine, licensing and controlling pilots. . . .

In the case of Gibbons vs. Ogden (9 Wheaton's Rep., 203) Chief Justice Marshall says of inspection laws:

> They form a portion of that immense mass of legislation which embraces everything within the territory of a state not surrendered to the general government; all which can be most advantageously exercised by the states themselves. Inspection laws, quarantine laws, health laws of every description, . . . are component parts of this mass. No direct general power over these objects is granted to Congress; and, consequently, they remain subject to state legislation.

So in Barbier vs. Connoly (U. S. Reports, 2 Peters, 102) we find the police power of the state to include "to prescribe regulations to promote the health, peace, morals, education and good order of the people."

The authority of the states to pass health laws, as in opposition to the power of Congress to regulate commerce, has been discussed in many cases before the Supreme Court of the United States, and whenever it has appeared that the statutes or regulations have been really in the interest of health the authority of the state has been sustained. Several statutes have been declared unconstitutional on the ground that, though nominally health regulations, they were not so in fact, but they were restrictions of commerce. Such was the ruling in the Railroad Company vs. Husen, 5 Otto, 465, in which the State of Missouri attempted to exclude cattle from certain other states, and in the Passenger cases (7 How., 283); yet in these the sanitary power of the states was recognized. In the Passenger cases Mr. Justice McLean said: "In giving the commercial power to Congress the states did not part with that power of self-preservation which must be inherent in every organized community" (p. 400). On the other hand, in Smith vs. St. Louis and Southwestern Railway Co., 181 U. S., p. 248, which, like the Husen case, referred to the quarantine of cattle, it was held that "quarantine law as construed and applied in this case is not in conflict with the Constitution of the United States. The prevention of disease is the essence of a quarantine law. Such law is directed not only to the actually diseased, but to what has become exposed to disease." In Morgan's Steamship Co. vs. Louisiana Board of Health, 118 U. S., p. 455, we find:

> The system of quarantine laws is a rightful exercise of the police power for the protection of health which is not forbidden by the Constitution of the United States. While some of the rules of that system may amount to regulations of commerce with foreign nations or among the states, though not so designed, they belong to that class which the states may establish until Congress acts in the matter, by covering the same ground or forbidding the states. Congress, so far from doing either of these things has, by the act of 1799 (Chap. 53 Rev. Stat.) and previous laws, and by the recent act of 1878 (20 stat. 37) adopted the laws of the states on that subject, and forbidden all interference with their enforcement.

In Jacobson vs. Massachusetts (197 U. S., 11) Mr. Justice Harlan says on page 25:

> The authority of the state to enact this statute is to be referred to what is commonly called the police power—a power which the state did not surrender when becoming a member of the union under the Constitution. Although this court has refrained from any attempt to define the limits of that power, yet it has distinctly recognized the authority of a state to enact quarantine laws and health laws of every description, indeed all laws that relate to matters completely within its territory, and which do not by their necessary operation affect the people of other states.

This power was upheld, even though it stopped navigation, as in Leovy vs. United States (177 U. S., p. 621), in which the right to erect a dike was upheld for public health, and in Manigault vs. Springs (199 U. S., p. 473), with reference to a dam on Kinlock Creek, and in *Compagnie Francaise de Navigation à Vapeur* vs. Louisiana State Board of Health (186 U. S., p. 380) a steamship company was forbidden to land its passengers at certain points in the State of Louisiana then under quarantine, although those passengers were not diseased, nor had they been exposed to disease, so far as was shown, and though they had sailed from European ports, in accordance with treaties made between the United States and European nations.

If the sanitary authority rests primarily in the states, does it not necessarily follow that it is the duty of the states to enact and enforce such laws and regulations as shall be best fitted to preserve the lives and health of the citizens? Does not a neglect to do so expose the state to a liability for damages? The object of laws is not the punishment of offenders, but the preservation of the persons and property of the citizens from injury. After an epidemic has despoiled a community, the state can not restore lives lost, or compensate for sickness. The duty of the state is to prevent the epidemic. Methods must change with increase of knowledge. Modern sanitary science is giving many aids for the control of disease far more efficient than the ancient quarantine. Health administrators may rightly be expected to keep informed, and to communicate to legislative bodies the knowledge of these advar [illegible] for their application. The special [illegible] ch branch of government must be recognized by all.

It must be remembered that the state has no authority to pass any retroactive law, or one which will impair a contract. In the case of dredging contracts already existing which have been based on the right to dump in the vicinity of the cribs, a new law prohibiting such dumping might be held as an impairment of contract. In the case in question, however, Illinois has a statute in the criminal code (Chapter 38, Section 202) providing that "whoever wilfully and maliciously defiles, corrupts or makes impure any spring, or other source of water, or reservoir . . . or aids and abets in any such trespass, shall be fined not exceeding $1,000, or confined in the county jail not exceeding one year." If that statute applies here, such dumping is illegal, and, therefore, a contract based on a presupposed violation of this statute would not be impaired by making the penalty greater, or more clearly stating the prohibition.

It is proper here to ask the question whether or not the discharge of sewers into the lake is not also a violation of this same statute, providing they are so located as to contaminate the water supply of the city. Probably this question may be answered only by a court decision.

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[1] Pomeroy: Constitutional Law, Sect. 329.

Just as the national government may not enact legislation further than the people of the individual states have granted authority, so cities, towns, villages and counties are restricted to the powers expressly given by the states. The unit is the state, not the city. Still we sometimes hear it stated that the city has complete power to control sanitation within its limits. The specific powers of a city may vary in different states, but the general statement is the same for all. Again, turning to Illinois for an example, we find a clear statement in the case of Jenkins vs. Board of Education. The relator, Louise Jenkins, was refused admission to the John Fiske School in Chicago because she had not been vaccinated, the board of education basing its refusal on an ordinance of the City of Chicago. In its decision the court says: "Not only has the legislature never prescribed vaccination as a condition to the enjoyment of the legal right to attend public schools, but they have never conferred on cities the power to do so," and again in the same decision: "The health commissioner is a purely ministerial officer and has no legislative powers whatever."

American governmental bodies are based on the triple system, legislative, executive and judicial. These should be distinct. The wording of the different constitutions vary, but the theory is the same in all. That of Illinois, for example, provides that "no person, or collection of persons, being one of these departments, shall exercise any power properly belonging to either of the others."

Health departments are executive in their character, and they should be so restricted in their operations. It is true that in many states a city or village council may be given the duties and authority of a board of health. Such provision is no exception to the general independence of the three branches. The council is legislative whether in or out of the board of health, and the health officer or commissioner is the executive.

Sanitary laws, like those of other nature, should be passed by legislative bodies; state boards of health, so far as I know, have nowhere in this country legislative powers. They may make rules and regulations for carrying into effect the statutes enacted, but such rules have not the standing or the permanence of statutes, and it is a mistake to attempt to depend on such regulations when a statute can be secured. To give uniformity and strength, so far as possible the sanitary statutes should be passed by the state legislature, rather than depend on the enactments of cities. The state statutes should require a certain form of health administration in every city of the state. That makes it possible without delay to communicate with the proper official. An illustration of what is not advisable may be found in the Illinois statutes on this point. There is no provision for compelling the appointment of either a city commissioner of health or board of health, but either are permitted. Neither is there any statement of the qualification for such officials.

If the requirement that contagious diseases should be reported depends on municipal enactment there is immediate confusion. One city requires whooping-cough reported, but not tuberculosis, and there may be a variation also in other requirements. Such laws should be passed by the state, specifically mentioning each disease to be reported, and stating by whom, to whom and when such reports should be made. It is unfortunate that a very large proportion of practitioners do not yet realize that it is as important to report malaria and typhoid fever as it is to restrict smallpox. The determining what diseases should be reported should not be left to the individual judgment of a health officer or to the uncertain ruling of a court. Statistics to be valuable must be on a uniform basis and complete. The personal equation must be eliminated as much as possible.

There is a great difference between a mandate and a request. It is unfair to the practitioner to require him to comply with a rule which he may not easily find. He may be expected to comply with state statutes, but he should not be punished for failure to comply with a ruling of a health officer, or of a court, when such rulings are not easily within his knowledge. On the other hand, for due reason clearly stated, a health officer may request the reporting of a disease not mentioned in the statute, and the request would be generally complied with by the citizens if it were reasonable. Such reports would form a basis for study, and by proving their value the request might pave the way for the statute.

Statutes to be effective must be definite. While it may be necessary sometimes to leave something to the judgment of the executive, the essential requirements must be clearly stated. Suppose the statute simply requires the reporting of "infectious diseases," without mentioning their names. A physician failing to report malaria might deny its infectious character, and legally his opinion is as good as that of the health official. Only a court decision could settle the dispute. On the other hand, it may be left to the health official to determine to some degree the form of the report. His form may include a statement of water- and milk-supply, school attended and other important data, but unless such data are mentioned in the statute both official and practitioner must recognize that the giving of such information is largely an act of courtesy on the part of the reporter.

Not only is an executive health official denied legislative powers, but he is prohibited from acting in a judicial character. He may, and must, often decide questions of interpretation, but his decision is personal, not official. He may not legally determine what diseases shall be reported. Neither may he judicially decide that any statute is being violated. He may prosecute or begin action, but only a court may give a judicial decision.

According to the statutes of some states, the state board of health also has charge of licensure for medical practice. I am not aware of any judicial decision on this point, but it seems that such a provision is unconstitutional on the ground that boards of health are essentially executive, while the work of license boards is judicial, and entirely foreign to the work of a health department. The license board passes judgment on the standing of a medical school, or the educational and moral qualifications of a candidate, basing its action on the evidence presented. Prosecutions for violations of practice laws might properly be brought by a health department, but when the prosecutions are brought by the same body which issues the license the condition easily gives rise to a suspicion of legalized blackmailing.

One great limitation to all health work is ignorance. Administration can not advance far beyond popular knowledge. The model department of health must be primarily an educator. It must educate itself by making original investigations. Others may equally well make bacteriologic experiments, but health officials have a peculiar advantage for the collection and analysis of statistics. Since statistics form a very large portion of the foundation of public sanitation, it follows that to be a good statistician is a most important qualification for a health official. Then, too, there are certain problems which attract the attention of the sanitarian, which may totally escape the consideration of others. For example: Though plankton (pelagic flora and fauna, distinguished from coast and bottom forms) has been studied in its relation to fish culture, its sanitary relationship is not as yet known. It is quite likely that some forms may be pathogenetic either directly or by their effect on food fish. On the other hand, potamoplankton especially may prove a most important aid in sewage destruction.

The health department must also educate physicians and the laity to an appreciation of the known facts of sanitation, and to arouse a popular interest in the subject. With such a sympathetic interest it will be much more easy to secure suitable legislation, and to enforce the laws without unnecessary friction. On the other hand, when the legislation is far in advance of the popular education the executive must encounter great opposition in its enforcement. It is the lack of this sympathetic assistance which sometimes causes great annoyance. Frequent cases of a contagious disease occur, without an apparent connecting link, because many of the cases are unreported. A limitation here is caused by the unwillingness of people to submit to quarantine. Perhaps that unwillingness arises from financial necessity. The problem suggested is very largely sociologic, and the question to be answered is, how far the community is justified in establishing quarantine. Has the community a moral right to quarantine a family, unless it provides for the support of the family during the time?

A question as to the rights of an individual who is apparently healthy forms another limitation to the health official. Statutes should be passed giving the health official a right to make an examination of the person and discharges of a supposed disease-carrier, typhoid or diphtheria, for example, and to restrict the liberty of all such persons, prohibiting them especially from all occupations in which they would handle food materials, as in dairies, bakeries, restaurants, etc.

Sometimes a health official assumes authority which he does not possesss. Sanitary regulations relative to destruction of rats and insects should be based on statutes, but time may be saved sometimes by issuing an order unsupported by the law. It rarely is necessary to declare martial law. In the absence of specific laws it is usually safer to depend on moral suasion than to strain the force of authority. The facts should be clearly stated to the people that the responsibility for conditions and lack of statutory aid may be placed where it properly belongs.

While it is within the province of a health department to treat disease, it is questionable whether or not such treatment should go beyond protection against the spread of the disease. Unnecessary interference with private business arouses an opposition which does much to limit the usefulness of a health department. Physicians hesitate to report cases if they are to be deprived of the care of their patrons.

In a similar manner it is often necessary that the community should furnish free antitoxin for the purpose of restricting disease. If, however, the antitoxin is given free to all, the legitimate business of manufacturers and merchants is stifled. It is difficult to see any more excuse for supplying free antitoxin to all than for supplying clothing or bread for all.

It is not presumed that the foregoing is a complete discussion of the subject, but it is intended rather as a suggestive outline, to call attention to a much-neglected feature of our work. No reference is made to the limitations in school inspection, that great field for preventive medicine which must largely depend on wise legislation for authority. Neither have we called attention to the physical limitations, dependent on the nature of the soil and its former occupation, or on other conditions largely beyond control. It is a simple matter to construct a rat-proof town, but San Francisco has found it no easy task to exterminate those vermin from old buildings poorly constructed. And there is another great limitation so common as to be well recognized—that of finance. If we have not enough to do all we should like, we are obliged to select that which is most necessary.

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ABSTRACT OF DISCUSSION

Dr. J. W. Clemmer, Columbus, Ohio: This paper treats of fundamental principles in sanitary administration, and nothing could be of more importance in the public health service. At bottom this service rests on legal authority. A public sanitarian should know the legal provisions on which to ground public service. Sanitary authority primarily rests on a grant of the state; this grant may delegate authority to local boards of health to create such rules and regulations which on publication will have the force and effect of city ordinances. The state law may be specific in defining sanitary provisions in all matters of public health interests. In Ohio, large and general powers for sanitary administration are conferred on local boards of health. In turn, these boards create sanitary laws or ordinances for the regulation of the public. In this way the state confers not only police powers, but judicial powers on health boards. The Supreme Court of Ohio has recently confirmed the decisions of the lower courts in a case from Cincinnati in which a sanitary official, in carrying out a regulation of the board of health demanding the confiscation and destruction of milk kept for sale above a certain temperature, arrested and successfully prosecuted a dairyman under this regulation. From this it appears that all the courts of Ohio have confirmed a ruling of the health board in a specific matter of public health regulation. Such powers of administration applicable to other affairs give all the authority desired. The constitutionality of such enactment of the legislature, conferring such powers on appointive bodies, may be questioned, but the fact remains that the results of such a law in Ohio are satisfactory.

Trauma and Gastric Ulcer.—W. Oettinger reports in the *Archives des Maladies de l'Appareil Digestif*, iii, 1909, page 61, three cases in which a gastric ulcer developed after a contusion of the epigastric region, and the causal connection he regards as beyond question. He sifts the literature on the subject of ulcer consecutive to external trauma of the stomach region, and calls attention to occult hemorrhages in the stool as an important aid in diagnosis of gastric ulcer. Chemical tests of the stomach functioning in his cases after the trauma showed excessive glandular activity, and the fasting stomach contained a few c.c. up to 90 c.c. of gastric juice, free from admixture of food. This may be due to excess of glandular functioning, transient pyloric spasm or muscular atony, or all combined, and all these factors favor development of an ulcer. Hematemesis may be observed at once after the accident or after several days, or it may not occur, and the major classic symptoms of ulcer, paroxysmal radiating pain, vomiting of food, etc., are not the rule, but the exception, he says, in gastric ulcer. Diagnosis is possible, however, by investigation of the secretory and motor functioning and search for occult blood in the stool, and he expatiates on the importance of an early diagnosis before irreparable destruction of tissue. His patients were men between 28 and 38, and the accidents had occurred while driving or autoing.

MOLLUSCUM CONTAGIOSUM

REPORT OF AN INSTITUTIONAL EPIDEMIC OF FIFTY-NINE CASES*

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The term "molluscum" ("molluscis") was first used as descriptive of a dermatologic condition by Ludwig,[1] in 1739. The word was probably intended as a synonym for "mollis," describing certain soft tumors. Alibert,[2] Biett,[3] Cazenave[4] and Schedel,[5] on the contrary, attribute the origin of the term, used by Bateman,[6] to some resemblance existing between the cutaneous tumors and the knots on the bark of the maple. The disease was first described by Bateman in 1817, who gave a very good clinical description. The nomenclature of dermatology in the earlier days of this science of medicine was exceedingly chaotic. Several cases were reported as molluscum contagiosum shortly after Bateman's communication, but the most of these were, probably, fibroma molluscum. Alibert treated of molluscum contagiosum under the name of "mycosis fungoides." Bazin[7] described the disease under the term of "acne varioliformis." Erasmus Wilson[8] wrote of the condition under the heading of small sebaceous tumors. Duhring,[9] in 1881, used the title of "molluscum sebaceum." Unna in his book, "The Histopathology of the Diseases of the Skin," called the disease "epithelioma contagiosum." The terms employed by the various writers on this subject show the extensive and diverse titles used as descriptive of the condition.

Ever since this disease was first described the contagiousness has been discussed; Stelwagon's excellent paper[10] on the subject, in which are enumerated all the household and institutional epidemics on record, speaks strongly in favor of the contagious theory. Household and family epidemics will not be mentioned in this paper, but all of the institutional cases that have been obtainable will be described in some detail.

INSTITUTIONAL EPIDEMICS ALREADY RECORDED

Caillault's Cases.[11]—A girl, aged 8, was admitted to a hospital ward, with numerous tumors on the face, the eyelids and the shoulders. Fourteen out of the thirty children in the same ward finally became affected.

Ebert's Cases.[12]—A girl, aged 14, was admitted to a hospital with tumors on the face. The disease spread to three children who occupied the nearest beds and who came in contact with the patient and each other.

Liveing's Cases.[13]—Nine cases were observed in a school. A few months after the first case was noticed, the eight other patients were attacked.

Mittendorf's Cases.[14]—An epidemic was seen at a home for children. The disease was introduced by a little girl; an attendant noticed lesions on the eyelids at the time of her admission. A few weeks later several of the other girls developed similar lesions. Three months after the arrival of the first patient at the home, twenty-seven children had the disease. Another epidemic was observed at a nursery and hospital for children. Forty-one of the children were attacked within two years after the first case had been noted.

Jackson's Cases.[15]—A small outbreak occurred in the children's pavilion of a hospital. A week after the first case came under observation, 2 others developed; a week later another appeared; and the next week 2 additional cases—6 in all.

Allen's Cases.[16]—A child, with a few typical lesions on the face, was admitted to an asylum. Forty-two children were attacked by the disease a few months after the first child entered the institution. Five new cases subsequently developed, making a total of forty-seven. Another epidemic was described by Allen, also in a children's hospital. A little girl was brought in with a few characteristic tumors on the face; a boy playmate soon developed lesions of the same type; five other children were attacked by the disease.

Stelwagon's Cases.[10]—The first series, consisting of four cases, was seen in a children's hospital. The disease was discovered in one of the crippled infants, and a short time afterward three other patients, in the same ward, were attacked. The second epidemic occurred in a home for children; there were thirteen cases in all among about a hundred children. The third outbreak was noted in the last-named institution about a year later, the former patients having been cured. It consisted of twelve cases.

Tommasoli's Cases.[17]—This epidemic consisted of fifty-six cases in a children's asylum in the city of Sienna.

Graham's Cases.[18]—A little girl was brought to a home for infants with mollusca on the face. Two months later four children developed the disease. The lesions continued to appear on the other children; in four years' time fifteen cases were noted.

AUTHOR'S CASES

During the last year 59 cases of molluscum contagiosum have been seen in St. Vincent's Home out of about 350 children.

Sex.—Thirty of the patients were girls and the other twenty-nine were boys.

Age.—Five of the cases occurred at 7 years of age; 7 at 6 years; 11 at 5 years; 18 at 4 years; 14 at 3 years; and the 4 remaining cases at the age of 2 years.

Location of Lesions.—More than one area was involved in 27 of the cases. The eyelids were attacked in 22 cases; the chin in 16; the cheeks, right, left or both were involved in 11 cases; the forehead was the area of predilection in 11; the nose in 9; the cutaneous surface of the lip in 5 cases; the neck, anterior surface, in 5; the posterior surface of the neck in 3 cases; the left ear in 2; the dorsal surface of the right hand in 4 cases; the middle of the back in 1 case; and in 1 case, the left thigh was the site of attack. In 1 case, the vermilion border of the lower lip was involved by two small, pinhead-sized lesions. Two of the patients reported by Allen also had mollusca on the mucous membrane of the lip. A severe conjunctivitis was produced in one of the cases by a molluscum on the edge of the eyelid causing friction. Similar instances have been reported by Steffen[19] and also by Muetze.[20]

Number of Lesions.—One lesion was present in 19 of the cases; two in 12 cases; three also in 12 cases; four mollusca in 4 cases; five lesions in 2 other cases; six in 4 cases; 1 patient had seven lesions; and in 5 children there were, on each, twelve mollusca. The lesions were mostly from small to large pinhead in size; one molluscum was, however, pedunculated and cherry-size.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Ludwig: Quoted by Erasmus Wilson, p. 301.
2. Alibert: Quoted by Erasmus Wilson, Diseases of the Skin, 1842, p. 309.
3. Biett: Quoted by Erasmus Wilson.
4. Cazenave: Quoted by Erasmus Wilson.
5. Schedel: Quoted by Erasmus Wilson.
6. Bateman: Delineations of Cutaneous Diseases, 1817.
7. Bazin: Quoted by Pye-Smith, Diseases of the Skin, 1893.
8. Wilson, Erasmus: Diseases of the Skin, 1842, p. 301.
9. Duhring: Diseases of the Skin, ed. 2, 1881, p. 121.
10. Stelwagon: The Question of the Contagiousness of Molluscum Contagiosum, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 50; 1889, p. 60.
11. Caillault: Traité pratique des maladies de la peau chez les enfants, Paris, 1859, p. 94.
12. Ebert: Jahrb. f. Kinderh., 1870, iii, 152.
13. Liveing: Lancet, London, 1878, ii, 495.
14. Mittendorf: Quoted by Stelwagon, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 52.
15. Jackson: Jour. Cutan. and Genito-Urin. Dis., 1891, p. 338.
16. Allen: Jour. Cutan. and Genito-Urin. Dis., 1886, p. 239.
17. Tommasoli: Quoted by Stelwagon, Jour. Cutan. and Genito-Urin. Dis., 1895, p. 50.
18. Graham: Jour. Cutan. and Genito-Urin. Dis., 1892, p. 89.
19. Steffen: Klin. Monatsbl. f. Augenh., 1895, p. 457.
20. Muetze: Arch. f. Augenh., 1896, xxxiii, 302.

EXPERIMENTAL INOCULATION

Whenever the opportunity offers experimental inoculation should be tried, in order to determine, if possible, the incubation period of the disease. Several authors (Retzius,[21] Paterson,[22] Vidal,[23] Stanziale,[24] Pick,[25] Haab,[26] and Nobel[27]) have reported favorable results. Several others (Stelwagon,[10] Allen[16]) have been unsuccessful in the attempt.

Retzius reported a successful inoculation on himself. A small quantity of the molluscum material was rubbed into the upper chest; this area was protected by a watch-glass. A pinhead-sized lesion appeared four to five months after this experiment; the growth progressively increased in size during the next three months. The lesion then gradually disappeared. Microscopic examinations of the pressed-out contents were corroborative of the clinical diagnosis.

Paterson, after several attempts, finally succeeded. The contents of the tumor were inserted into the follicles, in a tender part of the skin; such as the angles of the mouth, axillæ, mammæ, etc.

Vidal recorded a successful result, Pantry, one of his assistants, performing the experiment. A positive result was determined in three months.

Stanziale's experimental inoculation also had a successful termination. The substance of the molluscum was rubbed into the sound skin of the inner surface of the arm and forearm; three months later a hempseed-sized lesion developed. Forty days later this tumor had become pea-sized.

Pick, of Prague, was extremely successful in his experiments; nine out of twelve inoculations succeeded. The skin over Scarpa's triangle, in a boy of 11 and a girl of 9, was used in the inoculation. The twelve inoculations were made just within the epidermis. The lesions did not begin to develop until the tenth week; two weeks afterward they were excised, and were found to correspond microscopically with molluscum.

Haab succeeded in inoculating himself, after rubbing the contents of a freshly extirpated lesion into the skin of the forearm. Nothing was noticed for six months, when a characteristic hempseed-sized lesion developed, resembling, clinically and microscopically, a typical molluscum growth.

Nobel's reported favorable result was performed on a patient already attacked by the disease, one of the lesions on the patient acting as the inoculating material. Characteristic lesions did not develop for nine weeks.

Inoculation experiments were attempted in two children, each aged 4, the one a boy and the other a girl. These two children had not been exposed to the disease. In the first case the inoculation was made on Nov. 8, 1908; a small area on the right upper arm was excoriated by a scalpel until oozing of lymph occurred; the contents of a molluscum from one of the affected patients was then rubbed in, antiseptic precautions being observed. Five weeks later a small, conical, yellowish, elevated lesion was noted in the inoculated area; this lesion looked typical of a beginning molluscum. In a few weeks' time, however, the lesion dried up and disappeared. No other phenomenon has occurred in this area.

The second subject was inoculated on Nov. 24, 1908. Two small areas were abraded on the outer surface of the upper arm; the contents of the molluscum was rubbed into one of these; a few drops of a sterile salt solution mixed with some of the contents of a molluscum lesion was rubbed into the other. Unfortunately the arm became somewhat infected and the result has been absolutely negative. The areas inoculated were covered by vaccination shields. The incubation period of the disease can not be stated because the successful results so far obtained have varied between a few weeks and many months. The incubation period, from the time of admission of a child into the home until the disease was acquired, was approximately, in several cases, a year and one-half.

PATHOLOGY

The microscopic picture of the pathologic changes that occur in this disease is quite characteristic, with the lobulated appearance, the fibrous capsule, and the diagnostic molluscum bodies. The origin of the growth, and particularly the molluscum bodies, has been, and still is, a much discussed and unsettled question. The subject has been so fully described in the excellent paper[28] of C. J. White and W. H. Robey, Jr., that only a few of the important points will be emphasized here.

Engel,[29] in 1844, regarded the tumor as an enlarged sebaceous gland; Rokintansky,[30] and also Hebra,[31] some years later, agreed with Engel. In 1865 Virchow[32] stated that the new growth was a lobulated, glandular epithelioma arising from the hair follicle. Retzius stated that the tumor did not rise from the hair follicle, but owed its origin entirely to the epidermis. Boeck[33] denied the sebaceous origin of the new growth, because fat could not be detected in its cells.

White considered that the source of the growth was the rete layer. Crocker[34] believed in the follicular origin of the tumor. Benda[35] stated that in some cases the tumor arose in the hair follicle. Caspary[36] believed that the tumor had its origin in the rete cells. Patterson, in 1841, was the first to mention the so-called molluscum corpuscles or bodies. MacCallum[37] limits the term "molluscum corpuscle" to the peculiar body inside of the epithelial cell. Kaposi[38] beieved that the peculiar molluscum bodies arose from the transformation of cell protoplasm. Vidal inferred from the jelly-like translucency of the bodies that they were the product of a colloid degeneration. Geber[39] sketched the evolution from the rete cells. Unna[40] believed that the bodies were only the result of colloid or hyaline degeneration of the prickle cells.

C. J. White, in the most elaborate paper written recently on this subject, considers that the bodies are simply keratin, identical with the horny layer, except in the shape of the individual cells. He states that the growth arises from the rete, and that there is an extraordinary metamorphosis of rete cells into normal keratin. Several biopsies were made in these cases; the microscope proved the clinical diagnosis.

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[21] Retzius: Deutsch. Klin., 1872, p. 39; 1871, No. 50.

[22] Paterson (quoted in Duckworth's paper, St. Bartholomew's Hosp. Rep., 1872, viii, 64): Edinburgh Med. and Surg. Jour., 1841, p. 280.

[23] Vidal: Progrès méd., 1878, p. 478.

[24] Stanziale: Gior. internaz. d. sc. med., 1890, p. 321.

[25] Pick: Monatsh. f. prakt. Dermat., 1892, xv, 133.

[26] Haab: Correspondenzblatt für Aerzte, No. 8, 1886; quoted from article by Stelwagon, Note 10.

[27] Nobel: Arch. f. Dermat. u. Syph., 1893, p. 929.

[28] White, C. J., and Robey, W. H., Jr.: Jour. Med. Research, 1902, new series, ii, 255.

[29] Engel: Ztschr. d. k. k. Gesellsch. d. Aerzte zu Wien, 1844.

[30] Rokintansky: Pathologische Anatomie, 1856, p. 79.

[31] Hebra: Lehrbuch der Hautkrankheiten, 1872.

[32] Virchow: Berl. klin. Wchnschr., 1865, p. 34.

[33] Boeck: Vrtljsch. f. Dermat. u. Syph., 1875, p. 23.

[34] Crocker: Diseases of the Skin, 1893, p. 479.

[35] Benda: Ztschr. f. Dermat., 1895, p. 195.

[36] Caspary: Vrtljschr. f. Dermat. u. Syph., 1882, p. 205.

[37] MacCallum: Jour. Cutan. and Genito-Urin. Dis., 1892, p. 93.

[38] Kaposi: Vrtljschr. f. Dermat. u. Syph., 1877, p. 333.

[39] Geber: Vrtljschr. f. Dermat. u. Syph., 1882, p. 403.

[40] Unna: The Histopathology of the Diseases of the Skin, transl. by Walker, 1896, p. 795.

BACTERIOLOGY AND CULTURAL EXPERIMENTS

Angelucci,[41] in 1881, described a bacterium, the *Bacterium lepogenum*, which, he maintained, was the cause of the tumor. Neisser,[42] in 1882, denied this and put forward the theory that the cause of the tumor was a gregarin and asserted that the peculiar bodies were the shells of these organisms. Graham[18] stated that he had found a micrococcus in his cases, which grew on potato and in bouillon, produced fermentation in milk, and was stained by Gram and Gabbet's methods. Robey, after extensive cultural experiments, came to the conclusion that the organism found was the *Staphylococcus epidermidis albus* of Welch, the normal inhabitant of the deeper layers of the skin.

Cultural experiments were made in these cases and two organisms were found. The first was a non-motile bacterium, size 0.5 to 1.0 by 1.0 to 2.0 microns, aerobic and facultative anaerobic. It grows abundantly at either room temperature or at 37.5 centigrade. It was negative to the Gram test. All of the differential tests were carried out and the organism was classed as the *Bacterium aerogenes*. The organism was probably present because of some slight contamination at the time of making the molluscum cultures. The second was a round, slightly oval coccus, divided in all planes, about 0.8 microns in diameter; Gram's method gave a positive result. Careful experiments were carried out on all culture media, and numerous tests were employed to determine the proper classification. This organism apparently is the *Micrococcus salivarius;* it was isolated by Biondi from the saliva. It resembles markedly the *Micrococcus epidermidis albus*, but differs from it in one chief way, in its activity regarding gelatin; the *Micrococcus albus* liquefies it in about two to three days, the *salivarius* not at all. These two organisms resemble each other so closely that it is only fair to suppose that they are in some way related; possibly two forms of the same micrococcus.

It is to be hoped that the etiologic factors of the disease will be elucidated, and that the pathologic origin of the growth and of the so-called molluscum bodies will be positively determined.

SUMMARY

Molloscum contagiosum usually attacks the face, in a great majority of the cases on, or in close proximity to, the eyelids. Children are more susceptible to the disease than adults.

It is very difficult to explain the present or other epidemics on any other theory except that the disease is contagious.

The cause of the disease is, unfortunately, still to be determined; although a micro-organism, usually a coccus, has been found in a few cases.

The incubation period is undetermined; from the experiments so far carried out, from a few weeks to many months.

The skin apparently does not have to be broken for the infection to occur, but this point is still undecided.

In closing I wish to express my thanks to Dr. Thomas Cope, pathologist to the St. Vincent's Home, for the careful cultural experiments; to Dr. C. Y. White, former pathologist to the home, for pathologic sections, and to Dr. Kolmer, resident physician in the same institution, for inoculation tests.

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ABSTRACT OF DISCUSSION

Dr. George Pernet, London, Eng.: One point not mentioned is that molluscum contagiosum may be found in certain birds, such as pigeons and buntings. In one instance two women contracted the disease from a pet pigeon. One case was in the practice of an ophthalmologist, and was recorded by him. The patient was in the habit of fondling the pigeon, and suffered much from the disease, especially about the eyelids. Since that time, when these patients come to me, I always inquire whether they have handled birds of this sort. I find that curetting the lesions with a sharp fenestrated curette is one of the readiest methods of getting rid of them, instead of splitting them up.

Dr. Louis A. Duhring, Philadelphia: The photographs that I saw did not show the usual formation of the tumors, in that there was no distinctly defined umbilication. It is well known that this umbilication is not always manifest, and apparently it was absent in some of these tumors. I have seen cases of this disease for many years in my own city and elsewhere, and I am always on the lookout for it in the hospitals with which I am connected, but I have found that it is a rare disease outside of asylums and institutions. Notwithstanding the facts relating to contagion, I have never been convinced of the contagiousness of the disease, and the many experiments that have been made still seem to leave that an open question. Its epidemic character is, of course, to be recognized, especially in institutions. The treatment of molluscum contagiosum may be made extremely simple. Perhaps the easiest method is to touch the lesions with a drop of acetic or trichloracetic acid, or to incise and express the contents.

The pathology of this affection, as described by Dr Knowles, is in accord with the studies that have been reported by Dr. White of Boston. I could never see that the disease was parasitic, rather it seemed to be due to elaborate changes in the epidermis, which have been so well described by Dr. White and by others. The affection has also been observed in birds and certain animals.

I think that records of epidemics of the kind narrated should be reported, and in the course of time we shall have much valuable material from which to draw conclusions. The question of the possible contagious character of the disease is one of importance, and one about which we ought to express ourselves if we have had any experience touching on that subject.

Dr. Marcus Haase, Memphis: I recall one case in an English boy, 19 years old, who had a linear group of three lesions on the anterior aspect of one leg. Having had my attention called to the fact that this disease might be transmitted through birds, I questioned him along that line, but he said he had never handled birds.

Dr. William A. Pusey, Chicago: As a student, I was taught to expect molluscom contagiosum as a common affection, but I have found it rare. I certainly see in Chicago ten cases of blastomycosis, for example, to one case of molluscum contagiosum.

Dr. F. C. Knowles, Philadelphia: In regard to the occurrence of this affection in birds, and various other phases of the subject, I did not take the time to refer to them, as the literature is very extensive, and I had to stick to the subject under discussion. In the pictures that I passed around, it was my endeavor to bring out the umbilication of the lesions. Most of the lesions were absolutely typical in every way, including the umbilication.

St. Vincent's Home, where the epidemic reported by Dr. Stelwagon occurred, is a sister institution to the one referred to in my paper, and the children are sent there as they grow older. It was apparently a continuation of the same epidemic. As a rule, I see about ten or fifteen of these cases every year in the hospitals with which I am connected, but during the past year I have seen over 100 cases, including the 59 reported in this paper. In Dr. Hartzell's service at the University of Pennsylvania Hospital, I have had an opportunity of seeing, during the last few months, an epidemic of over 30 cases; the students in the college department were attacked. This is the largest number I have seen in one year.

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41. Angelucci: Internat. Med. Congress, 1881.
42. Neisser: Monatsh. f. prakt. Dermat., March, 1882

THE COMPARATIVE VALUE OF THE INTERNAL ADMINISTRATION, INUNCTIONS AND INJECTION METHOD OF ADMINISTERING MERCURY IN THE TREATMENT OF SYPHILIS *

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In presenting this article I realize the magnitude of the subject and my inability to do it full justice in the time allotted to me. Hence I shall endeavor to discuss the merits of each method impartially and estimate their comparative value, more from my own personal experience in their employment than from the opinions of authors, and I shall quote only when I deem it necessary, as such information any of us can obtain by consulting text-books.

Mercury still stands the premier of all remedies in the treatment of syphilis, and in the light of recent research its position has been reinforced and greatly strengthened. The brilliant work of Schaudinn, Metchnikoff, Neisser and Wassermann has proved that mercury is still our chief remedy, and that the reasoning of all our great clinicians has been correct in regard to its action.

The serum treatment is still in its infancy, and even if one is developed that will cause a more rapid disappearance of syphilitic manifestations than mercury it will require years to prove its superiority and to establish it as a remedy on which we can rely.

INTERNAL ADMINISTRATION OF MERCURY

The ingestion method, or mercury administered by mouth, is one of the oldest methods, and one used more generally by the profession than any other. I fully realize the storm of criticism that may follow my condemnation of this treatment, especially since it is the one favored by our greatest syphilographers.

Fournier calls it the "true method of the treatment of syphilis," and I cheerfully acknowledge him the greatest living authority on syphilis to-day. He prefers internal treatment to all other methods as routine work, and his writings, in addition to Ricord's, are responsible, I believe, for the popularity of the protoiodid pill—the hydrargyri *iodidum flavum of the Pharmacopeia*. In this country White, Keyes and Taylor are also partial to the protoiodid for routine treatment.

Jonathan Hutchinson considers his gray powder with opium as superior to all other forms of administration.

Keyes, in advocating the internal treatment, prefers the protoiodid pill, to be administered according to his method, which he calls his "tonic treatment," and a great many American physicians have adopted his system.

It is right here, though, that I presume to take issue with these eminent authors, and say that the internal, inunction and injection methods should be employed in the treatment of every case of syphilis; or the internal and inunction combined; or the internal and injection combined; depending on the condition of the patient, his surroundings, etc., as to which is the most advantageous or convenient under the circumstances as they exist. I am opposed to depending on the internal administration alone, as in my experience its action is so feeble and so slow on the syphilitic manifestations, disappointing and discouraging to the patient, on account of slow progress. Its irritating effect on the gums, as it produces stomatitis much earlier than when using either of the older methods; its irritating effect on the stomach and bowels, especially when anything like an adequate dose is given; its uncertain action, being the slowest of all the methods in appearing in the urine; and the frequent outcropping of symptoms while under its influence, have led me to depend on it only when the patient is free from all manifestations of syphilis, and it is desired to keep him slightly under the influence of mercury, as a matter of precaution, when he is being allowed to rest between the periods of his heavier courses of medication. As a rule, the gums will become inflamed, and gastrointestinal symptoms develop long before any material improvement has occurred in the symptoms of the patient, and in most of the grave tertiary lesions that I see the patient gives a history of indifferent treatment or a two or three years' course of internal medication. At least 95 per cent. of the patients with secondary syphilis who consult me have been on pill treatment from one to six months. They generally show numerous symptoms in the form of mucous patches, secondary rashes, sore throat, or some of the other symptoms coincident with the secondary stage. It is not unusual, inaddition, that their gums are sore and inflamed from mercury, and the treatment has been so impotent that they come to the springs for relief, even against the advice of their home physicians. Immediate change for the better is noticed as soon as they are put on the inunctions or injections of mercury, and within a period of three or four weeks as a rule they are free from all manifestations and apparently fully restored to health. It is such cases as these that create numerous converts to the Hot Springs treatment. A large percentage do not remain long enough, return to their homes, and shortly resume internal treatment, and it is not unusual for me to receive letters from them in a period of from two to three months, stating that recurrent secondaries have developed. Now, to my mind, any treatment that will allow symptoms to develop when under its influence (of course, excluding malignant syphilis) is inadequate and should not be depended on exclusively. In some cases of old tertiary lues, in which there is pronounced anemia and cachexia, I have seen beautiful results from internal administration of mercury, combined with iodid of potassium, the old "mixed treatment," so called; but in the early secondary period its action is too slow and in the presence of any grave lesion it is absolutely impotent. In my locality I see numerous cases of tertiary syphilis, involving the nervous system, and a great number of them give histories of three years' internal treatment, especially those that have developed parasyphilitic conditions. These clinical pictures, with which I am so often confronted, have naturally caused me to consider this method of very feeble therapeutic value. The objections of some that it is not scientific because we can not tell how much is absorbed can also be said against the inunction method; but this objection is of very little importance, it seems to me, as it is of minor consequence how little or how much mercury is absorbed, just so we get the therapeutic result; no two people absorb mercury alike; no stereotyped dose can be exactly laid down for all cases. The doses must be varied according to the individual, and it is of little consequence only so that we are careful not to overmercurialize our patient.

When giving mercury by mouth, I prefer a pill containing biniodid of mercury and the iodids of arsenic and gold; it is non-irritating and has been productive of good results. Another pill to which I am very partial is one recommended by Dr. Bernheim, of Philadelphia, in a paper read before the Mississippi Valley Medical Association in 1898, and which he calls "pill enteric." His formula, which I have slightly modified, contains:

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

½ grain metallic mercury,
½ grain hydrated wool fat,
½ grain purified ox-gall.

This pill produces less gastrointestinal disturbance than any I have ever used and is as potent in its effect as any of the salts of mercury.

INUNCTIONS OF MERCURY

This is the oldest method of administering mercury, and was employed as far back as the fifteenth century. The description by Fournier of the barbarous manner in which it was applied in those days engendered a prejudice against mercury that reaches down to the present day in the minds of the laity, and is fostered and kept alive by patent-medicine vendors and quacks. It is the ideal way of administering mercury, and would be far superior in routine treatment to any other method we possess if its application were not disagreeable and associated with so many objections.

First, the most important objection, I consider, is that it betrays the patient's secret, and if he is married or living with his family it is practically impossible to administer it without detection. A great many object to it because it is more or less filthy apparently, especially when the mercury cycle is used, and if great care is not exercised in protecting the skin it frequently produces a severe dermatitis. I have seen patients in whom the treatment was absolutely interdicted on this account, the skin being so tender that one application would produce a most violent dermatitis. In one unique case of mine a single inunction of mercury produced a severe edema of the side on which the rub was applied. The rub was applied to the outer surface of the right thigh; the next day the patient's right leg, arm, scrotum and penis were intensely red and edematous.

Patients at home object to the treatment, not only on account of its publicity, but because one can not feel very clean when being constantly anointed every day on different parts of their anatomy, and wearing a suit of underwear stained with the ointment. A very important factor in securing results from this method is to have the ointment properly applied: it should be applied by a trained rubber or masseur. This is the reason that in most cases this treatment is left to be administered at the different thermal resorts that are noted for the treatment of lues on this continent and in Europe; this is why our results are superior to those obtained at home, when the ointment is applied by the patient.

Among the advantages of the inunction treatment I will first mention that it is not painful and it is free from danger. It is potent and intense, and the stomach is left free for other medication. As it is quick and potent in its action, it produces immediate and rapid improvement of the patient, and the disappearance of all syphilitic manifestations. A very marked change for the better is produced within a few days. It does not affect the gums nearly so quickly as the internal administration, but when stomatitis does occur, if the mouth has not been frequently inspected and kept clean, it is liable to be more severe and to last longer. Occasionally early in the course, but generally after several weeks' rubbing, the patient will suddenly develop a mercurial intoxication in the form of acute enterocolitis, with severe griping pains and profuse diarrhea, and the stools may contain a little blood. This condition can generally be relieved within forty-eight hours; the patient can resume his treatment without any further discomfort, and he will generally finish his course with no recurrence.

Frequently these attacks are brought on from indiscretion in diet, and are not due to mercurial poisoning.

In my eighteen years' experience at Hot Springs, and in treating over six thousand cases of syphilis in private practice, I have employed inunctions extensively, and the longer I use them the more partial I have become to them and convinced of their merit; but there is one defect which occasionally causes failure in the treatment and which I have observed a great many times. It is not due to any fault of the method, but to the idiosyncrasy of the patient. There are some patients who, on account of the peculiar texture of the skin, do not absorb mercury. You may rub them over a long period and not witness any response to treatment by improvement of their symptoms, the physiologic action of the drug, or manifestation of mercury in their urine. These patients, of course, if one changes to injections, will immediately respond and show marked signs of improvement. Such cases, I think, are frequently mistaken by physicians, who believe the phenomenon to be a demonstration of the superiority of injections over inunctions; and, of course, in these particular cases, injections are superior. But it does not demonstrate that injections are better for all, as the fault is to be found in the resistance of the patient's skin, and not in the method.

I could cite a great number of such cases from my case books, but I do not care to take up space with case records. The only place I have seen this fact mentioned in literature is in the new work, "System of Syphilis,[1]" in the chapter on the treatment by inunctions, etc., in which the statement is made that in some cases no mercury was eliminated by the urine, although the skin had been thoroughly anointed, so that it seems as though some skins were impervious to this method of administration.

Ehrmann first drew attention to this important fact in connection with the elimination of mercury after inunctions. He showed a patient at the dermatologic congress held at Vienna in 1901 whose urine was free from mercury, although he had been rubbed with mercurial ointment on twenty occasions.

Mracek, at the same meeting, told of a patient who was still covered with the maculopapular syphilid, although he had received four hundred inunctions of mercury. In spite of this energetic treatment, he never had any mercury in the urine, and the syphilitic signs actually increased while he was under treatment. The technic of this method of administering mercury is very important in promoting good results; also the quality of the ointment used; I have used a great variety of ointments, and prefer Squibb's 50 per cent. ointment.

At Aix-la-Chapelle, the mercury cycle is used; that is, different portions of the body are selected every day for the rubbings until the whole surface is anointed. This is the method generally in vogue throughout this country by physicians in our large cities. The Hot Springs method is confined to applying mercury on the back, and sometimes on the hips, and outer surface of the thighs. It was first instituted at the Springs forty years ago, and physicians practicing there still employ it, and have never seen any advantage or reason for making a change. Our results are as good and gratifying, and the physiologic effect just as rapid as when the other method is used, and it has the advantage of being much cleaner, pleasanter, and more agreeable to the patient.

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[1] System of Syphilis. Edited by Power and Murphy, Oxford Med. Pub. Co., London, Chapter 13, Vol. II.

Our technic is as follows: After a warm bath the patient sits astride of a chair, and the attendant spreads the ointment on the back, using a rubber mitt to protect his hand. The ointment is thus rubbed in with a long, sweeping, circular motion, the attendant exercising a firm pressure, but not sufficient to produce too much warmth, as hard rubbing produces irritation. After he has finished, a thin gauze athletic shirt is pulled down over the surface to protect the other undergarments, or else a mercurial pad is used, which is impervious, and is much preferred by many patients. This pad was recently invented by Dr. Randolph Brunson, of Hot Springs, for the purpose of obtaining quicker constitutional results, as the outer covering of the pad is made of an impervious fabric, which produces a slight moisture and softening of the skin, and thereby promotes a more rapid absorption of the ointment. If the pad is used, it is worn constantly throughout the entire course. If the mercury shirt is used, it is changed every ten days or two weeks, as the patient keeps it on constantly, not removing it even when he retires. He gets constant absorption from contact, as considerable mercury becomes deposited on the shirt. Before the inunction is applied the attendant washes the back thoroughly with some good antiseptic solution. The one I prefer is the 1 to 2000 biniodid of mercury, or equal parts of liquor antisepticus U. S. P., and saturated solution of boric acid. This latter formula is very soothing, as there is always plenty of infection on the surface of the skin, and sterilization of the back will add largely to the prevention of any irritation; any hairy portion of the back should be shaved before a course of rubs is instituted. If the patient seems to have a specially irritable skin, in addition, I have the back oiled with a solution of ichthyol and oil of sweet almond. This does not interfere with the action of the mercury, and generally keeps the back in excellent condition.

Now as to the comparative value and potency of the inunction and injection method: From my experience, I am convinced that the inunctions are just as powerful in their action as any of the soluble preparations of mercury, and in some cases much more so; also the effect of the inunctions is much more lasting, and recurrent symptoms do not occur near as early as they do after a course of soluble injections. I have been using injections for ten years, and during that period have had ample opportunity to compare the two methods, as during this time about 75 per cent. of my luetic cases were on the inunctions and 25 per cent. on injections. With few exceptions, I have not been able to see any advantage soluble injections have over the inunctions. The symptoms are not relieved any faster, and, if anything, the improvement in the inunction cases has been more rapid. In addition, the injections are generally more or less painful. To some patients they do not seem to cause any discomfort, while others will rebel against them bitterly. There seems to be a great difference in patients' susceptibility to the pain-producing property of mercury. I have yet to use an injection, containing mercury of sufficient quantity to be of benefit, which would not cause more or less pain. I have had a great number of patients under my care who have recently been to a northern resort in this country where the soluble injections of mercury are largely used. After being conducted through a course of inunctions, they invariably become disciples of the inunction treatment. Patients who do not thrive on the inunctions and improve more rapidly on injections of soluble mercury do so, as I said before, on account of lack of absorption, and still there are others that improve on account of constitutional idiosyncrasy, and I have frequently observed the reverse occur, and had them improve rapidly on the inunctions when injections had failed. There is a great difference in patients' susceptibility to mercury; some require an enormous amount to produce the desired result, while others require very little. One patient, who was suffering with a large gumma on his forehead, had been rubbing for six weeks before coming under my care, and taking large doses of iodid of potassium. The treatment made no impression on the tumor, but, in fact, it was growing larger, and he showed no symptoms of mercurialization. I gave him thirty-six injections of salicylate of mercury, one grain each, every other day, with complete disappearance of the tumor, and still no evidence of mercurial depression or tenderness of the gums appeared. I allowed him to rest two months, and gave him twenty injections of modified gray oil, one grain each. At the expiration of this course, his gums became slightly inflamed, or "touched'" as we express it. I saw him eighteen months later and he was in excellent health.

Another patient whom I had under my care four years ago, with cerebral syphilis, took 136 inunctions and twenty-six injections of one-fourth grain each, of succinimid of mercury, coincident with the rubs. At no time was the course interrupted, nor did he show any pronounced symptoms of mercurialization; as to the merits of this treatment in his case I recently received a letter from him, stating that he is in perfect health. These cases, of course, are rare, while now, at the other extreme, we occasionally encounter patients who can not stand mercury at all, even when their condition indicates that they are sadly in need of it. I have seen one inunction of mercury produce a severe mercurial intoxication; in another case two inunctions produced similar results. Frequently these poor unfortunates have a tendency to malignant syphilis, and can not tolerate specific treatment and show no response to it; they tax our ability to the limit.

The theory that was advanced in Germany a few years ago, that no absorption occurred from the rubbing of mercury, but that the medicament was taken in entirely by inhalation, has always appeared to me absurd. This has been proved a fallacy by the experiment of shaving the back of a rabbit and rubbing the mercury in the exposed part of the skin; a section of the skin was then examined under the microscope, and globules of mercury were found in the sebaceous and sudorific glands.

Likewise, we all know that rubbers would be susceptible to mercurial poisoning if this theory was correct, as they are exposed to the so-called fumes while constantly rubbing it. I know bath-house attendants at the Springs who have been rubbing mercury for thirty years, and have never shown any signs of mercurial poisoning, nor have I ever heard of one. I have a man in the rubbing department of my office who has been rubbing on an average of from ten to twenty patients a day for ten years; the room is kept at a temperature of from 80 to 85 F., and he has never shown any symptoms of mercurialization in the slightest degree.

INJECTION METHOD

The injection method of administering mercury, according to Fournier, was first "introduced by Hebra in 1864, but it did not really enter into practice until after the publication of Lewin in 1867." It grew into popularity much more rapidly on the continent of Europe than in America, and I think the writings of Taylor and J. William White in Morrow's "System of Genitourinary Diseases and Syphilis," condemning it, had considerable to do with retarding its adoption by Americans, and subduing our enthusiasm; especially as White's article contained letters from a large number of our most prominent specialists in those days, and they all condemned it as inferior and dangerous. In the last twelve or fourteen years, it has rapidly grown into favor in this country, especially injections of the soluble salts of mercury. Hundreds of papers have been written on the subject, and I fear some writers have allowed their enthusiasm to warp their better or more matured judgment. The marvelous claims for it by some I consider very much overdrawn and I do not consider it a treatment that should be adopted in all cases, as advocated by some.

If a great many of these same zealous enthusiasts had had the same experience with the inunctions, I firmly believe that their opinions would be very much modified, and of more value. The injection method has many attractive advantages: first, it is clean; it is secretive; it absolutely conceals the patient's condition from every one but his physician; but the large volume of advantages that are claimed for it by the numerous advocates would fill several chapters.

Colonel Lambkin, in "System of Syphilis," vol. ii, gives as a brief list of the most important points to consider as I have found. They are as follows:

1. It is convenient to the patient.
2. It insures the patient's getting regular treatment.
3. It leaves the stomach free for the reception of other medicines.
4. It insures more accurate doses.
5. The absorption of mercury is much more certain.
6. It does not interfere with the gastrointestinal system.
7. There is less chance of toxic symptoms, especially of stomatitis.
8. Both therapeutic intensity and physiologic effect are much more marked when the mercury is introduced by this method than by others.
9. I will add that some writers have stated that we get a greater amount of effect from a smaller amount of mercury than when using any other method.

I will briefly analyze the various claims: Nos. 1, 2 and 3 I admit and pass on without further discussion, only to say that the same can be said about inunctions.

4. The dose may be more accurate; but what advantage is this, if no two persons require the same dose? And frequently the dose has to be changed at different periods in the same patient.

5. The absorption of mercury is much more certain. This will depend, though, on its not becoming incapsulated, as it frequently does. Often we see patients, especially those who have been taking injections of the soluble salts of mercury, with their buttocks a mass of nodules even a year or so after they have received the injections; that these nodosities all contain mercury is beautifully illustrated in the two cases cited by Fournier. I have also seen these nodules suddenly absorbed and producing very sore gums.

6. As to the claim that it does not interfere with the gastrointestinal system, this is a grave mistake, as I have seen very severe mercurial intoxication produced from the injections, and the fatal cases that had been reported from the insoluble salts generally show marked disturbance of the gastrointestinal tract.

7. As to there being less chance of toxic symptoms, this is also a grave error. A number of deaths have been reported from injections of insoluble preparations of mercury. Dr. Fuller, in his article on the "Salicylate of Mercury,[2]" speaks about the possibility of producing an oil embolism that may manifest alarming symptoms, though not fatal.

Fournier relates numerous deaths that have occurred from injections of calomel, and I presume all have seen Lessère's recent report of the number of deaths and accidents that have occurred from injections of insoluble salts and gray oil.

Bartsch, of Breslau, has recently published several cases of poisoning with fatal results, two of which are especially interesting; one patient, a young woman of 24, died from four injections of a 10 per cent. solution of salicylate of mercury. Another, a woman of 40, died after four injections of calomel; both patients had severe diarrhea and mercurial colitis.

As to the injections being less liable to produce stomatitis, when the latter does occur, it is generally much more severe and lasts longer than when using the other methods.

8. I admit that the therapeutic intensity and physiologic effect is much more marked and lasting when the insoluble preparations are given, but not so when the soluble are given, as they are inferior to inunctions in most cases.

9. As to securing the greatest effect with the smallest amount of mercury, I consider this of minor importance. It seems to me a matter of very little consequence how much mercury you use, so long as it does not injure your patient, and he improves while under its administration.

The soluble preparations I have used are the succinimid, bichlorid, biniodid, sozoiodolate, albuminate, benzoate, and cyanid. I prefer the cyanid and the succinimid, as they are the least painful. The bichlorid I consider superior to them all, but it is so painful and prone to nodulation that a great many patients will not submit to the treatment. I have modified and greatly reduced the pain from injections of bichlorid by the following formula:

℞.	gm. or c.c.	
Bichlorid of mercury	|5	gr. viii
Phenol (carbolic acid)	|5	m. viii
Physiologic salt solution	31|	℥i

The dose is from fifteen to thirty minims (1 to 2 c.c.) every other day. This is my original formula, although it has been appropriated as original by two writers in different parts of this country, but they received the formula indirectly from me. There is no danger from the carbolic acid in this preparation, and it greatly reduces the pain of the injection.

INSOLUBLE PREPARATIONS

This is the most intense and potent method we have of administering mercury, but, as it is not free from danger, it should not be adopted as a routine and used without discrimination and care; hence, it should be reserved for selected cases, especially those in which it is desired to produce a profound mercurial impression. The one that ranks at the head of them all, I presume, is calomel, but with it I have never had any experience, although I was deeply impressed with the article read before this section last year by Dr. Klotz. I have been deterred from its use by the literature on the subject, as the majority admit that it is very painful, besides being the most dangerous. I have never had a case in which I deemed it necessary to resort to its use. My experience has been confined to the emulsion of salicylate in 10 per cent. solution of liquid petrolatum, as advised by Fuller and Gottheil. I used this preparation in a number of cases for about one year, and had some very excellent results, one in particular I have mentioned above, but, on account of the volume of the injection, and a number of patients complaining of it being painful, I changed to the modified gray oil, as suggested to me by Dr. Heidingsfeld. The original gray oil, or oleum cinereum, as invented by Lang, I had previously tried and discontinued, likewise on account of the great pain it produced.

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[2] Med. Rec., New York.

About three years ago Dr. Heidingsfeld gave me his formula, which was a modification of Lang's, and consisted of pure hydrated wool fat and bidistilled dental mercury, equal parts by weight, making a 50 per cent. ointment, of which one minim approximately represented one-half grain metallic mercury. His previous modification of Lang's oil I had tried, and stated to him that I found it very painful. In this previous formula he used liquid petrolatum and also sterilized his wool fat; he had discovered that if he did not sterilize the wool fat and depended on the mercury to render the oil sterile it caused very little discomfort and was almost painless. Sterilizing the wool fat causes some chemical change with which I am not familiar, but it is a clinical fact that it does render the injections much more painful. I have been using this preparation now for the last three years, and am much pleased with its results and its powerful action on syphilitic lesions; very few patients have ever complained of pain from the injection. Some will complain of pain and soreness a day or so after the first two injections are given. After that their hips seem to become inured and cause them very little discomfort. The dose is from two or three minims, as suggested by Dr. Heidingsfeld.

Dr. L. E. Schmitt, of Chicago, uses as high as five minims, but I prefer the small dose, and give the injections more frequently. This oil being so thick (the appellation "gray ointment" would be more descriptive), there is practically no danger of producing an embolism, and the small quantity injected is an important factor, I think, in rendering it less painful. A preparation used in England is called "mercurial cream." With this, liquid paraffin is added to the base, as in Lang's latest formula; this is used largely in the British army, and admitted, by the writers who advocate its use, to be very painful.

Colonel Lambkin has modified the formula, and uses palmitin as a base, adding camphoric acid and absolute creosote to render it painless and sterile. He uses the same combination with calomel injections, and says that it renders the injections of both absolutely painless.

His description of his experiences with these preparations is, indeed, very attractive, and I intend giving them a trial.

I have administered over six hundred injections of Heidingsfeld's modified gray oil, and have had only two superficial abscesses, both in women with fleshy hips. They were caused by withdrawing the needle too soon and allowing a thin column of mercury to follow the needle into the subcutaneous tissue. In addition, the needle was not sufficiently long to deposit the mercury in the muscular tissue.

The technic of these injections is very important. In the first place, the needle must be long enough to insert the oil well into the muscles, as it is a very stiff ointment; after inserting the needle, considerable pressure must be exerted to expel the oil into the tissues. Likewise, the needle should be allowed to remain at rest before it is withdrawn, fully twenty to thirty seconds, so that the mercury has ceased oozing from the end of the needle, thus avoiding the accident I spoke of above; if any mercury is deposited immediately beneath the skin, it is liable to form a very sore and painful nodule that may possibly terminate in a superficial abscess. Great surgical care and cleanliness must always be carried out in giving these injections.

I employ this preparation in all cases that have failed to respond to the soluble injections or inunctions, in cases in which I desire a quick and intense action of mercury in the presence of all serious lesions, especially of the nervous system, when desiring to give the therapeutic test, and in cases of patients who object to frequent visits to the office. Injections are given every other day, every third day, twice a week, or once a week, depending on the mercurial energy I wish to exert. My results have proved to me that it is the most intense and desirable method of administering mercury in severe cases, and a treatment to which a patient rarely, if ever, objects. Cases in which the other methods have failed will respond to these injections, and my results, as a rule, have been all that I could desire, and most gratifying to the patient. The method is not nearly so liable to produce mercurial intoxication as are the soluble injections, but there is one important factor to keep in mind always: At the first suggestion of tenderness of the gums or any other toxic symptom, the treatment must be stopped, as there still remains considerable mercury in the tissues, and if you are not very careful you are likely to have very severe stomatitis with pronounced physical and nervous prostration. I have had the gums become inflamed a month or six weeks, and in one case two months, after the course of injections had been finished, E. L. Keyes has made the same observation.

SUMMARY

Now, to recapitulate as briefly as I can, in comparing the three methods:

As stated before, I consider that all methods should be combined at different periods during a full course of treatment. A course of treatment in the early inception of syphilis, I think, should start either with inunctions or injections and be followed by internal medication, instead of the pill or internal treatment being given first, and followed later by injections and rubs, as advised by most modern text-books. The brilliant results to be obtained in the prevention of future accidents in any case, I think, are to be accomplished in the first year's treatment, and we should attack the disease energetically, and when the system is being flooded with the syphilitic virus. The more rapidly we can overwhelm and cause the extinction of the spirochete, with a treatment that is not injurious to the system, the better is our selection. Hence I have formulated the following routine to be pursued in cases of syphilis as they ordinarily run:

First Year.—Two courses of either inunctions or injections, covering a period of two months each; after each course of treatment a month's rest should be allowed and then internal medication two months during the interim up to within a month before resuming the second course, whether inunctions or injections, making four months' rubs, four months' internal treatment, four months' rest.

Second Year.—Two courses of rubs or injections six weeks each; two courses of internal treatment, eight weeks each; two courses of rest, six weeks each, and two of four weeks each, making a total of three months' heavy rubs or injections, four months' pills, and five months' rest.

Third Year.—Treatment every other month, alternating between the internal and more intense methods.

Fourth Year.—Six weeks of inunctions or injections.

Fifth Year.—Four to six weeks of inunctions or injections. The above treatment is given in tabular form:

TABLE OF COURSE OF TREATMENT FOR FIVE YEARS

First year.

2 months' inunctions or injections.
1 month's rest,
2 months' internal treatment,
1 month's rest,
2 months' inunctions or injections,
1 month's rest,
2 months' internal treatment,
1 month's rest,
Giving 8 months' treatment, and 4 months' rest.

Second Year.

6 weeks' inunctions or injections,
8 weeks' rest,
8 weeks' internal treatment,
4 weeks' rest,
6 weeks' inunctions or injections,
8 weeks' rest,
8 weeks' internal treatment,
4 weeks' rest,
Giving total, second year, 7 months' treatment, 5 months' rest.

Third year.

1 month inunctions or injections,
1 month rest,
1 month internal treatment,
1 month rest, continuing so throughout the entire year, alternating from internal to injections or rubs
Thus giving the total during the third year of 6 months' treatment, and 6 months' rest.

Fourth year.

6 weeks' inunctions or injections.

Fifth year.

4 to 6 weeks' inunctions or injections.

Then one course of treatment of one month each, for the next five years, thus carrying our patient up to or through the parasyphilitic stage. I do not contend that every patient absolutely needs this protracted treatment; no doubt, a good number escape, and live to a ripe old age, after a very indifferent course, of one or two years' treatment following infection. Undoubtedly some recover spontaneously, but there is a large percentage of those who do not enjoy such luck, as my home is a Mecca for so many of these unfortunates; I am constantly confronted with numerous cases of early neglect and insufficient treatment.

Fournier states that at least 50 per cent. of tertiary lesions involve the nervous system, and this does not include all the parasyphilitic lesions. Hence, I think it better to treat a little too long than to stop one day too soon. I have patients who have been under my care for fifteen years who visit the Springs annually and take a course of three weeks of inunctions. Most of them have shown no signs of syphilis for ten or twelve years. Still they do this as a matter of precaution; the treatment seems to do them no harm and they enjoy excellent health; as the cure of syphilis is so uncertain, I feel more secure under these precautions and the patient feels likewise. I am a positive believer in the cure of syphilis, but I make this statement with qualifications, as I believe that, with few exceptions, the organism of every patient who has ever had syphilis is indelibly stamped with it for life; and that a proper course of three to five years' treatment following the infection will cure the average patient, provided he leads a proper life, but that there is always that apprehension that in the future, if some intercurrent trouble develops, that will create *the locus minoris resistentiæ,* his old malady may manifest itself in the form of a grave or serious accident.

In my experience I have seen it return thirty, thirty-eight and forty years after infection; during the intervals, the patients enjoyed excellent health and responded rapidly to treatment, which proved the diagnosis.

The important points which I wish to emphasize in this paper are:

All three methods should be used in treating any case of lues, as previously described.

When first instituting treatment after infection, either inunctions or injections should be employed, followed by internal medication, instead of treatment with pills, first followed by more heroic methods, as advised by most of the leading writers.

The inunctions, from my experience and observation, on an average, are superior to the soluble injections, and more lasting in their effects.

The insoluble salts are too intense and profound to be employed in routine, and should be held in reserve for rebellious cases and for cases in which rapid and pronounced mercurialization is desired.

Finally, the long course of treatment I have advised should be pursued in all cases.

The six cardinal points in the therapeutics of syphilis are to keep a close observation of the weight, kidneys, bowels, stomach, gums and nervous system; especially the latter, as some patients will never manifest any evidence of mercury in the form of stomatitis, and the first evidence you have is a profound and acute nervous prostration.

102 Exchange street.

ABSTRACT OF DISCUSSION

Dr. William S. Gottheil, New York: I advocate a conservative eclecticism in the treatment of syphilis. We should never forget that when we introduce mercury into the human system we are incorporating a substance that is poisonous, and that may have untoward and unexpected effects. Death has occurred from administration of mercury in any form, by ingestion and by inunction; it has occurred from injections of soluble as well as of insoluble preparations of this drug. Injections of gray oil have been responsible for more accidents than any other preparation. I am not prepared to say that this is because it is more dangerous than the others; perhaps it is because it has been more largely used.

There is a distinct reaction after the injections; the metallic antitoxin acts exactly like the organic diphtheria antitoxin in this respect. I have studied this more especially in the case of physicians who were under treatment. There are chills, malaise, pains in the limbs, and a temperature that may rise to 104 F. and over. This reaction may be so severe as to constitute a valid contraindication to the mode of administration. There are also other contraindications. Some patients are so thin and have such small gluteal muscles that the injury of the injection causes them too much trouble; and occasionally we meet one so very stout that the longest needle will not reach through the layers of fat into the center of the muscle mass, and painful indurations result. I have found, however, that women stand the injections remarkably well, provided that a sufficiently long needle is used; and I always keep some on hand for the purpose.

Dr. W. B. Trimble, New York City: I thought Dr. Gottheil advocated the use of the injection treatment, above all others, and as a routine measure in every case, I disagree with this view, as I do not think it the method of election in every case of syphilis. If it were necessary to select one form of treatment to the exclusion of all others, I do not think I would hesitate in choosing the inunction plan. The soluble preparations that I usually employ are the succinimid and the benzoate.

Dr. Alexander S. Wolf, St. Louis: It appears to be a comfortable and convenient arrangement for both physician and patient to have a nurse or an attendant rub the blue ointment into the skin of the patient, but such a luxury can be had only by the wealthy. Such a procedure, however, is not rational, and for the rich as the poor we must insist on self-inunction treatment as the one which under necessary instructions for the patient—and in this regard our young generation of physicians must be instructed thoroughly in the school—will alone be of benefit. While the poor patient will abide by our directions without any further deliberation, the well-to-do patient who has heard about inunctions carried out by a nurse, must be enlightened as to the necessity and rationality of self-rubbing. You need only to impress on his mind that it is better for his health and the result of the treatment, if a good deal of the ointment will remain in the skin of his own hand than in the leather of the nurse's glove.

Dr. Louis E. Schmidt, Chicago: In discussing this subject of the comparative value of the different methods of treating syphilis, we should do so in connection with our present knowledge of serum reaction. I have had about 60 cases of syphilis in which practically the same line of treatment has been carried out, mostly by the injection method with gray oil. I want to bring out the result of the Wassermann test in these cases. In some cases, the test was negative after only eighteen months of treatment, while others gave a marked reaction after four or five years of treatment. I have had patients under my observation and treatment for three, four and five years, and still the test is positive. What am I to do in such cases? Am I to continue vigorous treatment for ten years or more if the reaction continues positive, and in those cases that give a negative reaction after only eighteen months of treatment, can treatment be discontinued or pursued less vigorously? I believe the test should be repeated every six months, and if it remains negative, continue to leave the patient untreated. However, as the test is still so new, I am inclined to believe that a mild mixed treatment should be kept up.

Dr. E. C. Hay, Hot Springs, Ark.: One point I would like to emphasize is that the insoluble injections should not be repeated too rapidly, in order to avoid the possibility of mercurial stasis, as alarming or even fatal symptoms may develop if not detected in time from a sudden absorption of a large quantity of mercury. This condition can generally be recognized by keeping a close watch over the urine for the elimination of mercury. In regard to the inunction method, I am not in favor of having the patients rub each other. In my experience, it has been better to employ a trained rubber for that purpose, one who can do the work more thoroughly than the patients could do it for themselves.

Municipal Playgrounds.—Playgrounds, places for the youngsters to play and develop their young lungs by exercise, are becoming one of the big items in the budget of a city. Chicago, for instance, has spent eleven million dollars on a system of playgrounds and recreation centers, containing outdoor and indoor gymnasiums, swimming pools, wading pools, shower baths, swings, slides, ball fields and rooms for lectures and social meetings. New standards have been set up in neighborhoods that knew them not, and the benefit is accounted so great that the cost of $2.00 per $1,000 assessed valuation of the property benefited is regarded as an ideal investment of the city's income.—*Hygiene and Physical Education.*

INOCULATIONS OF POLYVALENT STAPHYLOCOCCIC SUSPENSIONS IN STAPHYLOCOCCIC INFECTIONS OF THE SKIN *

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DETROIT

Now that time has allowed the smoke of enthusiasm to clear away, we should be able to take an accurate reckoning of the value of artificial immunization of patients with staphylococcic infections of the skin.

Two years ago, before this Section, I reported a series of staphylococcic infections of the skin treated by bacterial inoculations. The conclusions at that time were not unlike those of other investigators along this line of treatment. Autogenous suspensions were found more efficient than monovalent stock suspensions, and inoculations guided by opsonic estimations were found more effectual than those that were not so guided.

Owing to the time consumed in isolating the invading organism and standardizing the suspensions, and the difficulties in making opsonic estimations, opsonic therapy has evoked criticism. The purport of this paper, then, is to discuss the simplifications which assist in placing opsonic therapy on a practical basis. So much progress has been made over our previous knowledge that we are now able to obtain as good results, in selected cases, with polyvalent stock suspensions as with the autogenous. Laborious opsonic estimations are unnecessary as a guide to reinoculations. Experience has proved to me that inoculations of a polyvalent stock suspension, made at intervals indicated by clinical symptoms, produce as good results as when controlled by opsonic indices.

For some time bacteriologists have noted minute differences between cultures of the same species obtained from different sources, although the morphology of the organism shows the typical form on ordinary culture media. A suspension, then, made from a number of strains of the same organism, obtained from various patients suffering from the same disease, is the stock suspension employed. The object of this is to embody the varying properties of a number of strains.

Polyvalent suspensions of staphylococcic strains have been and are being used by many investigators, but, to my knowledge, no large number of strains obtained from the same disease has been employed. My polyvalent suspensions have contained no less than twenty different strains, which have been increased to forty by mixing two or more suspensions. These strains are kept growing slowly, at room temperature, in darkness, and are transferred as infrequently as possible to keep them alive. By this method the virulence of the strain is probably less lowered than might be the case if the strain was frequently transferred. New strains are occasionally being added which give varying ages to the suspensions as well as varying virulence. Such a suspension is as easily prepared and standardized as an autogenous one, and retains its activity, as far as can be determined clinically, for at least six months. Here, then, we have a stock suspension which is ever ready and can be used when the patient first appears, with a saving of days of time over the method of preparing autogenous bacterial suspensions.

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* Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

From comparisons of opsonic indices, in a large number of like infections taken in the laboratory prior to using stock suspensions, we are given further valuable knowledge, not only in estimating the size of the dose to administer, but when to reinoculate. The dose of the first inoculation should be of sufficient size to cause only a slight languor, which means a four to eight hours' negative phase after the inoculation. From 100 to 150 millions is the appropriate initial dose, varying as clinical indications denote. In the immunization of animals toward a given toxin, the dose given must be of gradually increasing strength, to a certain standard, the frequency and size of the dose to be governed by the temperature of the animal and other clinical manifestations, and later by potency tests. The same is true of human artificial immunization with bacterial suspension, the doses varying in size and intervals. Within six times twenty-four hours after the initial dose, the patient's resistance, as proved by opsonic estimations, will have dropped after its positive phase to within nearly what it was when the first dose was administered. Then the second dose should be given, which should be from 200 to 250 millions, and the third from 300 to 400 millions. It is seldom necessary to increase the dose to more than 600 millions. The spacing of the first three doses six days apart (six times twenty-four hours) is of importance, and further doses should be given as clinical manifestations indicate. One of the first indications of a lowered resistance and recurrence is a tenderness in the already healed scar, as in boils.

The rebellious types of the following diseases are those to be considered: furunculosis and carbuncle, impetigo contagiosa, sycosis staphylogenes, and pustular acne. In selecting from this group of diseases, we are considering only the rebellious ones, thereby excluding the possibility of spontaneous recovery, consequently putting this therapeutic measure to the crucial test.

What is more annoying than the persistently recurring lesion in what is termed the chronic "boiler," or the sycosis condition which presents itself with a history of years of existence? The patient who returns almost annually, usually during February or March, with a multiple furunculosis has a lowered resistance to staphylococcic infection. We have heretofore reasoned that the condition of such a patient was below normal or he would not be afflicted with such infections. Our medical advice has been governed by such suppositions, and tonics, diet and specific medications, the action of which has never been clearly known, have been prescribed. We had no accurate means of determining the patient's resistance to the infection, or whether our treatment raised his resistance, until Sir A. E. Wright published his most ingenious technic, by the application of which we are able artificially to immunize patients by bacterial inoculations. The further proof that the patient's resistance is not only low during such infection but in the process of artificial immunization, lies in the fact that the patient's resistance shows a prompt rise, as indicated by laboratory indices which are confirmed clinically. The lowered resistance of the patient may not be due wholly to deficiencies in the blood substances or lack of opsonins, but partially to abnormal development or lack of tonicity of the skin structure. General lowered resistance to the staphylococcic family, due to constitutional diseases, will not be considered.

The predisposing qualities of such skin structures to infection must be considered and corrected, or the raising of the patient's resistance will often fail to cure.

Many abnormal conditions in the skin structure predispose to a more easy access of this type of infection into the deeper structures of the skin; for example, the thin, oily skin with the gaping sebaceous ducts not only allows easy entrance of the organisms, but such a skin supplies them with an abundance of food in the excess sebaceous material. The walling-off of such an infected area is Nature's means of preventing systemic infection. This process in the infection of the carbuncle or boil is so thorough that the infected area must necrose in order to rid itself of the infection. This process of defense not only practically stops leucocytosis, but prevents the toxins from entering the blood stream, except in limited quantity, which results in the formation of protective substances and only partial immunization. Protective substances are not generated in sufficient quantities to prevent reinoculation; hence the continuance of the infection. The toxins of such an infection must enter the blood stream in safe quantities in order that protective substances may be elaborated to the degree of immunization. While the natural forces of resistance are spending their best efforts in walling off the infection, unable to produce immunizing substances from lack of specific toxic material, our assistance in artificial immunization is of unquestionable value at this time, which is demonstrated clinically.

One can readily see the utter uselessness of attempting to raise the patient's resistance to a given organism when the protective substances or leucocytes are unable to reach the organisms because of the stagnation of circulation in the area of infection. The absolute necessity for other therapeutic means here presents itself to the more successful management and cure of this type of infection. The drawing off of such stagnant fluid by excision and evacuation of the furuncle or carbuncle and the application of heat, or Bier's hyperemia, cupping to encourage bleeding, is advisable. Such means not only draw off the stagnant infected blood and lymph, but produce increased circulation of blood and lymph through the infected area. At this time the assistance brought about by a general raising of the blood resistance may be effected by bacterial inoculations.

In no other staphylococcic infections of the skin have there been such uniformly gratifying results as in multiple furunculosis and carbuncles. This method of treatment has a scientific basis and is rapidly replacing the older methods. It has been possible, in a number of instances, to compare the efficiency of the polyvalent suspensions with that of autogenous suspensions, observations being assisted by patients, who were physicians. Rarely has a new lesion developed after the first inoculation has been administered. A partially developed lesion can often be dwarfed, and within forty-eight hours all pain and discomfort to the patient will have subsided.

In order to ascertain just what percentage of the cases were recurrent, I recently reviewed the histories for the last two years of patients given polyvalent suspensions: I was surprised to find that there had been only three recurrences out of twenty-eight cases of multiple furunculosis. It was also of interest to note that the three patients who suffered recurrences were those to whom no more than two inoculations had been administered. Undoubtedly, only partial immunization had been effected. Previous to this treatment, at least 90 per cent. of these cases had been the chronic recurrent type, and for a period of two years there have been no recurrences of cases who were given four or more inoculations.

Comparing our knowledge of immunization brought about in other infectious diseases, at least four inoculations seem necessary to insure against recurrence.

It is important to instruct the patients when inoculations are given to take precautions against fatigue. The negative phase will then be less pronounced, and the positive phase prolonged. The beneficial effects of inoculations can be completely destroyed by prolonging the negative phase by fatigue, alcoholism, menstruation, or any intemperate indulgence, and new lesions may develop.

CONCLUSIONS

Polyvalent staphylococcic stock suspensions administered in appropriate doses have a decided therapeutic value in a group of localized, rebellious infections of the skin. Their administration is practically without danger, bringing about prompt cessation of the active infection and immunizing the patient against a recurrence of the infection for a more or less prolonged interval.

Clinical observations act as guides to the time for reinoculation and the size of dose to be administered.

The appropriate standards for size and frequency of doses have been previously established from opsonic estimations on laboratory patients with like infections, and are not necessary for each specific case.

Failure to immunize the patient artificially may be due to an abnormal condition of the skin, non-specific bacterial suspensions, or incorrect dosage.

Much time is saved in the use of stock suspensions by the elimination of opsonic indices and by the assistance derived from other therapeutic measures.

Less suffering, less deformity, less danger of systemic infection, and less liability to recurrence are the advantages derived from the use of bacterial suspensions as a therapeutic agent.

I am especially indebted, and wish to express my thanks to L. T. Clark, B.S., of the Research Laboratory of Parke, Davis & Co., for bacteriologic assistance and suggestions.

Washington Arcade.

ABSTRACT OF DISCUSSION

Dr. M. L. Heidingsfeld, Cincinnati: I have been more than favorably impressed with the results which I have secured from vaccine treatment in furunculosis, acne, sycosis and various forms of dermatologic affections complicated with secondary impetiginous infection. I have been induced to take up this form of treatment, largely by the favorable results which I have obtained in genitourinary work with gonococcus vaccine. I have had no experience with polyvalent stock vaccine, as my work has been entirely limited to monovalent vaccine as supplied by various wholesale drug houses and with autogenous preparations. I believe that the vaccine treatment will have a future field of great value and usefulness in a host of dermatologic affections of infectious nature.

Dr. John A. Fordyce, New York City: I would like to put on record two cases of infection of the skin in which the autogenous vaccines were used with good results. One was a case of vegetating dermatitis, with abscesses, in which the *Staphylococcus albus* was found. An autogenous vaccine was used for a number of months, and the patient improved remarkably, many of the abscesses disappearing. The patient gained eighteen pounds in weight, but finally reached the stage where improvement ceased. The second case was one of general infection with the *Staphylococcus aureus*. There were vegetations of the scalp and lower extremities, and from these lesions cultures of the organism were made. An autogenous vaccine was used, and the patient improved very much.

Dr. A. Ravogli, Cincinnati: I had a case of sycosis folliculitis, which proved extremely obstinate, and in which I resorted to injections of vaccines of the *Staphylococcus albus* and *S. aureus*. The injection was followed by a very marked reaction. The patient developed a temperature of 102.5 F., which lasted about twelve hours, perhaps longer. Following this, the eruption began to improve, the pustules almost drying up. Then there was a recurrence of the pustular lesions and a second injection was given. In spite of the fact that the dose was increased, the reaction was not so marked as in the first instance. Following this the pustules again partly dried up, and the patient left the hospital, but returned in a worse condition than before. Further injections were tried, but as they did not prove beneficial, they were stopped, and external remedies were substituted.

Dr. Alfred Potter, Brooklyn: We have had some experience with the vaccines in Dr. Winfield's service at the King's County Hospital in Brooklyn in the treatment of pustular and pemphigoid conditions. In one case of bullous eruption, of the hemorrhagic type in which we isolated a bacillus of the colon type, the patient was apparently going to die, but recovery took place under the vaccine treatment.

Dr. Henry H. Hazen, Washington, D.C.: In the dermatologic department of the Johns Hopkins Hospital we have used vaccine treatment in about twelve cases a week. In one case, that of a student with an eruption of the nose resembling pustular acne, we first tried the staphylococcus vaccine without effect, then a vaccine made from the acne bacillus also without effect. A culture was made, showing an unidentified bacillus, and under the use of a vaccine prepared from this rapid improvement resulted. I believe that one reason why we frequently have poor results from a stock vaccine is that the eruption is due to a different organism. I feel that if stock vaccines do not work we should make a culture from the lesion and prepare our vaccine from this.

Now, a word as to the use of Bier's hyperemia in conjunction with the vaccine treatment. The reason for using a vaccine is as follows: The lesion is so localized that the toxins from it do not enter the general circulation sufficiently to stimulate the body cells to the production of the necessary amount of antitoxin. Vaccine, however, enters the general circulation and causes the production of antitoxin. Now, if the necessary amount of toxin can not get to the body, it is also probable that the necessary amount of antitoxin can not get to the lesion, but a cup will bring much more serum to the part, hence more antitoxin.

Dr. H. R. Varney, Detroit: In testing the clinical value of this suspension, I confined its application to the treatment of furunculosis in order to determine, so far as possible, its efficiency. My experience with the use of the stock vaccine in acne has not been uniformly good. The infection is too often secondary to an abnormal condition of the skin, and while one may get temporary improvement, recurrences are most likely to take place. The most important question in connection with this discussion is: Can we simplify our technics so as to use a stock suspension? In the report which I made two years ago I stated that autogenous vaccines were more efficacious than the stock vaccine. In one of my cases (that of a physician who has long been a sufferer from boils) I had a special autogenous vaccine made. This was tried, with several recurrences, but the patient had not further recurrence after three inoculations of the *Staphylococcus aureus* suspension composed of 23 strains. I am strongly in favor of aiding the vaccine treatment by increasing the blood supply to the parts by the Bier hyperemic cupping method.

The age of the vaccine is a very difficult point to determine. The fact that one patient responds as readily to a vaccine that is six months old as another does to a freshly made vaccine does not throw much light on the value of the age of the vaccine, and *vice versa*.

Traveling Cooking Schools.—In Germany, to teach peasants how to cook cheaply and well, traveling cooking schools are sent about. When we secure a national health department this can be looked forward to in this country—as well as traveling schools of instruction on many other subjects related to the health of the people.

CHLOROFORM RATHER THAN ETHER ANESTHESIA IN TUBERCULOSIS *

JOSEPH WALSH, M.D.
PHILADELPHIA

Ether has been the anesthetic for so many years along the northeastern coast of the United States that it is almost heresy to even discuss it; yet experience seems to show that it is either very irritating to the lungs or stimulating to a tuberculous process in the lungs and hence should not be used when there is question of pulmonary tuberculosis. Surgeons generally admit that ether is irritating to the lungs and yet they not only continue to administer it in cases of pulmonary tuberculosis, but also very rarely discuss the matter.

Wood's "Text-Book on Therapeutics" (thirteenth ed., 1906) recommends with Hewitt that in extreme emphysema, in chronic bronchitis attended by expectoration and dyspnea and in advanced pulmonary phthisis, chloroform or some other mixture containing chloroform should be employed. He adds that acute pulmonary disease especially contraindicates ether.

During the past six years I have never allowed my own patients with pulmonary tuberculosis to be operated on under ether when it was possible for me to prevent it. Moreover, all except one have been operated on under chloroform, and I have never seen any bad results that could possibly be attributed to this anesthetic.

During the same period I have seen a number of patients manifesting active tuberculosis of the lungs following operation, which activity appeared from a study of the history to be due either to the operation itself or to the ether anesthesia. The common operations in these cases were for enlarged glands of the neck, fistulas, appendicitis, enlarged tonsils and adenoids.

The following represent several cases taken from my records without selection which I had opportunity to examine and watch for some time before and after an operation with anesthesia:

ETHER ANESTHESIA

CASE 1.—*History.*—A woman, aged 27, had four attacks of appendicitis before I saw her Sept. 12, 1906. Her brother had at the time advanced tuberculosis of the lungs. She showed a very small lesion slightly active at the right apex and some wasting, weighing only 109 pounds when her normal weight was 129. In the next three months she improved to practically perfect well-being and on Dec. 11, 1906, was operated on for appendicitis under ether anesthesia. I have never been able since to get her in as good condition as she was before the operation, and in the meantime the lesion at the right apex has increased so that it is now definitely down to the second rib.

CASE 2.—*History.*—A case of Dr. Stanton's which I also saw several times and which is quite typical is as follows: A woman, aged 25, was perfectly well till she developed ischiorectal abscess. The ischiorectal abscess was operated on one year ago under local anesthesia and later a radical operation was done under ether. Within three days the temperature had risen to 103 F., she began to spit blood, and since, tuberculosis of the lungs, which was then first noticed, has greatly advanced. She is now in a practically hopeless condition.

CHLOROFORM ANESTHESIA

CASE 1.—*History.*—A woman, aged 21, was first seen Nov. 4, 1902. She had an infiltration of the upper half of the upper lobe on each side and coarse moist râles all over both lungs. She expectorated profusely and her sputum contained an innumerable number of tubercle bacilli for a year and a half after I first saw her. While those signs remained practically the same, but after she had definitely increased in weight and was in pretty good constitutional condition she developed, Sept. 7, 1903, an abscess of the breast (probably tuberculous), which was opened and radically cleaned out under chloroform anesthesia without the slightest bad symptom following. The patient came to my office ten days later and continued her treatment, and for the past two years she has been entirely well, without active physical signs in the chest, and without any cough or expectoration. On account of the intense irritation already manifested in both lungs I should have expected this patient to do very badly under ether.

CASE 2.—*History.*—A woman, aged 29, was first seen on Jan. 24, 1905. On May 23, 1905, she developed tuberculosis, apparently having contracted it from her husband, who was in an advanced stage. Her lesion was at the right apex and was definitely apparent and active. She became entirely well, and in January, 1908, developed appendicitis. She was operated on under chloroform, was out of the hospital in fourteen days, and since then has manifested no pulmonary irritation. In this case the lung condition was apparently cured or at least quiescent when she underwent the operation.

CASE 3.—*History.*—A woman, aged 25, was first seen Feb. 16, 1903. She had infiltration of the top of both lungs extending to the second rib with some dissemination. She went to the White Haven Sanatorium, became entirely well and was a nurse there for two years, when she developed pneumonia. It took a year to get over the pneumonia and its toxic effects. Three months later she developed acute appendicitis, for which she was operated on under chlorotorm anesthesia. She was out of the hospital in two weeks and has never had any symptoms since.

CASE 4.—*History.*—A woman, aged 24, was first seen Aug. 18, 1904. She had markedly enlarged right cervical glands, cavity at the top of the right lung and infiltration of the upper half of the left upper lobe. Was operated on for the enlarged cervical glands shortly after I first saw her under chloroform anesthesia. She became sufficiently well to enter the Phipps Hospital Training School, where she remained for a year, when she broke down from overwork and eventually died. The chloroform anesthesia, however, appeared to have rather a good than a bad effect.

NITROUS OXID GAS ANESTHESIA

CASE 1.—*History.*—A man, aged 18, was first seen in March, 1908, at the White Haven Sanatorium. History showed that pulmonary symptoms first developed in April 1907. The physical signs were those of tuberculous infiltration of the upper half of the right upper lobe. About three weeks after admission to the sanatorium he developed a large ischiorectal abscess which was opened. A radical operation was performed under nitrous oxid gas on Aug. 1, 1908. The abscess was very large, making the operation correspondingly serious. He continued to improve exactly as before the operation, never showed the slightest activity after the operation and left the White Haven Sanatorium with the "disease arrested" at the end of September, 1908, and since then has remained in perfect condition.

The mere statement of the cases makes it appear that chloroform might even be somewhat curative, and this has been asserted by some, especially Holmes and Woodcock of London. I am not ready, however, to advocate chloroform in the cure, but do believe that in case of necessary operation with anesthesia, chloroform should be the anesthetic and not ether. Moreover, chloroform should be administered, not only in all cases of tuberculosis of the lungs, but in all cases in which tuberculosis of the lungs may be suspected, like, for instance, cases that manifest tuberculosis elsewhere, as in the cervical glands, in the ischiorectal region, etc.

732 Pine Street.

Peritonitis Patients.—E. C. Rich, in *Denver Medical Times and Utah Medical Journal*, says that it is a well-established fact that patients with peritonitis stand short operations well, but long ones very badly.

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* Read before the Fifth Annual Meeting of the National Association for the Study and Prevention of Tuberculosis, Washington, D. C., May, 1909.

ANATOMY AND PHYSIOLOGY OF THE TONSIL*

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The tonsils are two masses of lymphoid tissue placed one in each tonsillar fossa and projecting into the oropharynx. They are oblong in shape with the long axis vertical. They are from 1.75 to 2.5 cm. in length and from 1.5 to 2 cm. in transverse diameter. In children under the age of eight they are usually larger, from 2.5 to 3 cm. in long axis by 1.5 to 2.5 in transverse diameter. They are covered by stratified epithelium of the mucous membrane and their pharyngeal surface is marked by small apertures which indicate the openings of the crypts. The epithelial lining of the crypts is reflected from the surface covering.

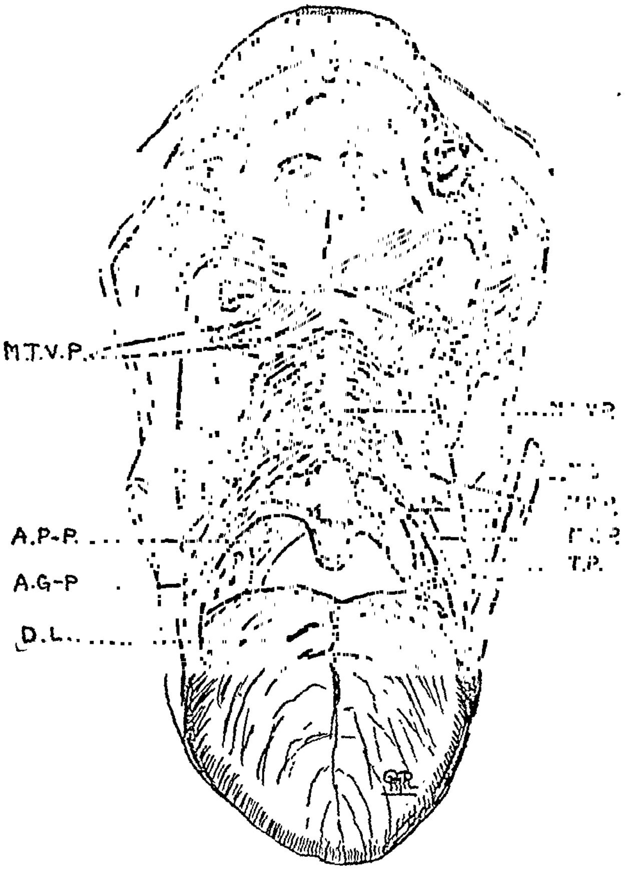

Fig. 1.—Showing anterior pillar (after Toldt): M. L. V. P., M. levator veli palatini; M. S., M. styloglossus; M. P.-P., M. pharyngopalatinus; M. G.-P., M. glossopalatinus; T. P., tonsilla palatina; M. T. V. P., M. tensor veli palatini; A. P.-P., arcus pharyngo-palatinus; A. G.-P., arcus glossopalatinus; D. P., dorsum linguæ.

The tonsils are composed almost entirely of lymphoid tissue which at intervals is aggregated into lymph nodes in which the lymph cells are more intimately arranged than elsewhere. The lymphoid tissue is surrounded by a dense capsule of connective tissue and the gland is divided into pockets by the trabeculæ, which are composed of connective tissue. The tonsil is part of the lymphatic circle which surrounds the oropharynx, called Waldeyer's ring.

In the neighboring part of the pharynx near the Eustachian tube, the upper part of the pharynx and the base of the tongue, there are masses of lymphoid tissue similar in structure to that of the tonsil, which also contain crypts.

FORMATION OF THE TONSIL

The tonsil makes its appearance about the fourth or fifth month of gestation. At birth it is a gland from 0.5 to 1 cm. in its long axis and from 0.25 to 0.5 cm. in lateral dimension. It develops as the child grows, reaching its full size between the sixth and eighth year of life. After this period it begins to atrophy and has disappeared by the twelfth year. At birth it is enclosed in the tonsillar fossa, being completely covered by the plica tonsillaris. Shortly after birth this membrane disappears, leaving the inner surface of the gland exposed to the oropharynx.

It is small at birth as compared with the thymus or thyroid gland. It is formed in the fetus by an invagination of the hypoblast which forms the capsule and the trabecular pouches or areas. The epiblast extends down into these trabecular areas and forms the crypts around which lympathic tissue develops.

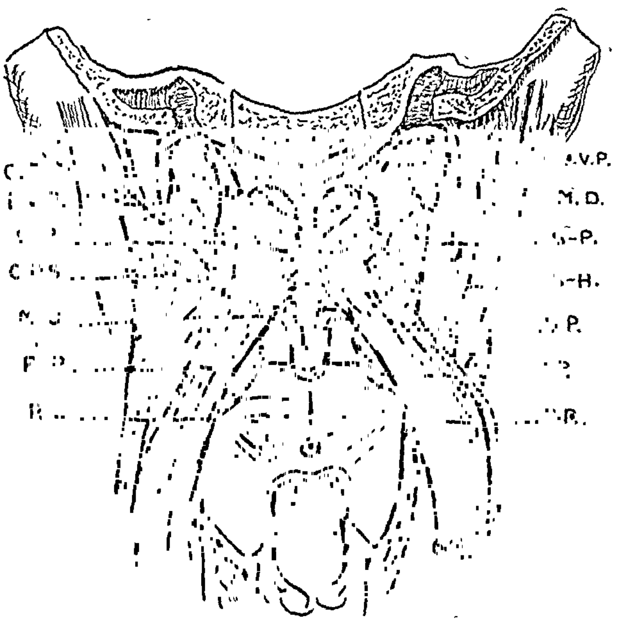

Fig. 2.—Showing posterior pillars (after Toldt): C. T., cartilago tubæ; M. L. V. P., M. levator veli palatini; M. S.-P., M. salpingopharyngeus; M. C. P. S., M. constrictor pharyngis superior; M. U., M. uvulæ; M. P.-P., M. pharyngopalatinus; R. L., radix linguæ; M. T. V. P., M. tensor veli palatina; M. D., M. digastricus; M. S.-P., M. stylopharyngeus; M. S.-H., M. stylohyoideus; U. P., uvula palatina; T. P., tonsilla palatina; M. P.-P., M. pharyngopalatinus.

ANATOMIC DESCRIPTION

The tonsil is situated between the anterior or glossopalatine fold and the posterior or palatopharyngeal fold. It is covered externally by the superior constrictor muscle. It does not completely fill the tonsillar fossa, there being a space above which is known as the supratonsillar space, or fossa, and it is sometimes found in unusual positions.

One case is reported in which the gland occupied a position on the posterior pillar just under the Eustachian tube. In two other cases the tonsil was attached to the posterior pharyngeal wall behind the uvula. In these cases the gland was pedunculated but contained well-defined crypts.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Palatal Pillars.—The anterior pillar is formed by the palatoglossus muscle, which is attached above to the aponeurosis of the velum and has its insertion in the tongue. Its action is to constrict the isthmus of the fauces and holds the tonsil back in place. The free edge is often attached to the tonsil by inflammatory adhesions from repeated attacks of tonsillitis. It may vary considerably in thickness and appear as a rough red membrane, with the outline indistinct or irregular. In other types it may appear so thin as to be almost transparent. At times the anterior pillar is found attached to the posterior pillar by a thin membrane which may be complete or partial, which is the remains of the plica tonsillaris (Fig. 1).

The Posterior Pillar.—This tissue is formed by the mucous membrane fold in which is contained the palatopharyngeus muscle. This muscle arises in the soft palate with fibers from its fellow of the opposite side. It passes partly above and partly below the levator palati and azygos uvulæ muscles. After forming the posterior pillar of the fauces the internal fibers are inserted into the pharyngeal aponeurosis and the external fibers pass forward to be inserted into the posterior border of the thyroid cartilage. The action of this muscle is to contract the isthmus of the fauces and to lift the soft palate. During inspiration the two pillars meet or nearly meet in the median line, thus shutting off the oral cavity from the respiratory tract (Fig. 2).

Plica Tonsillaris.—Some authors divide this membrane into two parts, the plica supratonsillaris and the plica triangularis. In truth the plica supratonsillaris is only a remaining part of the plica tonsillaris. The term plica triangularis should be discontinued because this membrane is not triangular in shape. Plica tonsillaris gives a better understanding of the correct significance of the membrane, which at birth is a normal embryonic tissue but which should completely disappear before the second year. If present after this age it is an abnormal remnant. When the plica tonsillaris does persist it is a continuation of the edge of the anterior pillar and may join the two pillars above, forming a band or fold over the upper part of the tonsil. The most common manifestations, however, are those tonsils which have the anterior edge covered by this membrane to a greater or less extent. It is impossible in many cases to define the edge of the anterior pillar.

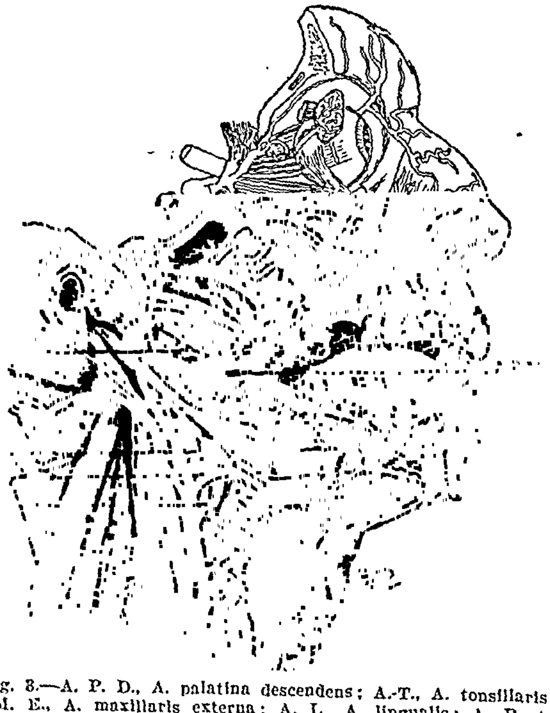

Fig. 3.—A. P. D., A. palatina descendens; A.-T., A. tonsillaris; A. M. E., A. maxillaris externa; A. L., A. lingualis; A. P. A., A. palatina ascendens. (Modified after Toldt.)

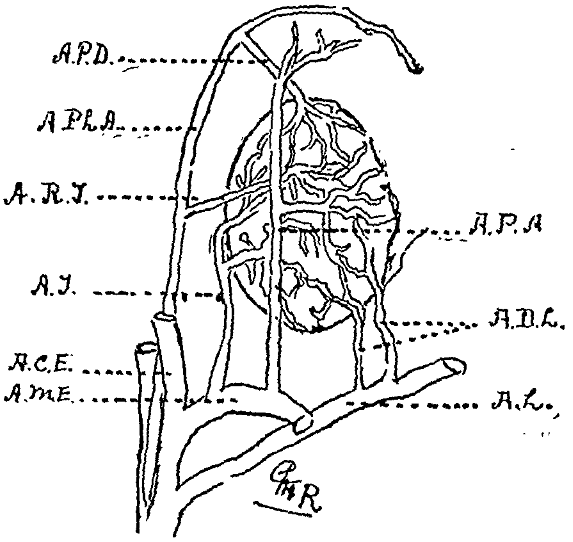

Fig. 4.—Schematic circulation circle of tonsil: A. P. D., A. palatina descendens; A. Ph. A., A. pharyngea ascendens; A. R. T., A. ramus tonsillaris; A T., A tonsillaris; A. C. E., A. carotis externa; A. M. E., A. maxillaris externa; A. L., A. lingualis; A. D. L., A. dorsalis linguæ; A P. A., A. palatina ascendens.

In 1906 I read before this Section a paper describing the common types of this membrane, mentioning, among others, a case in which the membrane completely covered the tonsil in an adult.[1]

Supratonsillar Fossa or Recessus Palatinus.—The supratonsillar fossa is a triangular, conical space with the apex outward, and when normal represents a considerable cavity above the tonsil. Its walls are formed by the anterior and posterior pillars, while the floor is formed by the superior surface of the faucial tonsil. It varies in size in different individuals and may differ from the fossa of the opposite side. It may extend downward and outward, external to the tonsil, or up and outward into the soft palate. There may be sinuses extending off from this space in one or more directions. This fossa is of importance from the fact that there are crypts emptying into this space and when the communication with the pharynx is imperfect or absent a collection of caseous material may be extruded from the tonsil, held in this space. This condition is the great cause of the infections which pass through the gland into the cervical lymphatics, and also the cause of the different types of quinsy from decomposition of this extruded material held in the supratonsillar space.

CAPSULE OF THE TONSIL

The tonsil has a capsule extending from the free edge of the pillars covering the external surface of the gland which furnishes support as well as an investing covering. This capsule is composed of connective tissue about 1 mm. in thickness and is smooth on the external surface. From this capsule bands of connective tissue called the trabeculæ are given off, which extend to the inner surface of the gland dividing it into spaces called the trabecular areas. In these trabecular bands lie the vessels, nerves, mucous ducts and lymph channels.

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[1] Faucial Tonsils, The Journal A. M. A., 1906, xlvii, 1725.

In some of the lower animals we find muscular tissue in these bands, but not in human beings.

Trabecular areas are supposed to be separate and distinct spaces, although Beck has injected bismuth paste into one crypt and has seen it communicate with four or five other trabecular spaces.

The youngest patient was eight years of age, while all the others were adults. This communication between crypts is at variance with my experience and I am inclined to the belief that the phenomenon observed by Beck is pathologic.

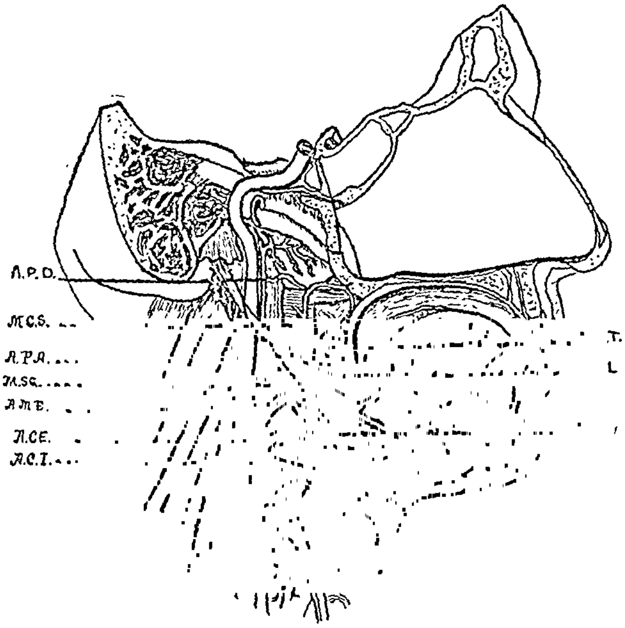

Fig. 5.—A. P. D., A. palatina descendens; M. C. S., M. constrictor superior; A. P. A., A. palatina ascendens; M. S. G., M. styloglossus; A. M. E., A. maxillaris externa; A. C. E., A. carotis externa; A. C. I., A. carotis interna; A. R. T., A. ramus tonsillaris; A. D. L., A. dorsalis linguæ; A. L., A. lingualis. (After Toldt.)

CRYPTS

The crypts vary in number and length. Some authors place the number at from fifteen to eighteen. I have seen many tonsils which had as few as four or eight. The number depends upon the size and condition of the tonsil examined. In the upper half of the tonsil the crypts are longer, usually extending downward and outward to the capsule on the external surface of the gland. Those opening below the middle of the gland extend outward or outward and upward. They are much shorter than the upper crypts. The upper crypts, especially those which empty into the supratonsillar fossa, are usually filled or partially filled with caseous material, while those emptying directly into the pharynx are seldom found with material in the crypt. This fact is easily explained by remembering that when swallowing the tonsils are squeezed by the palatal and superior constrictor muscles. This empties the crypt of material if there be no obstruction at its mouth, in which case the material cannot escape from the pressure of the obstruction.

If there be a tonsil which fills the supratonsillar fossa or a plica tonsillaris covering over the crypt walling the supratonsillar fossa off from the pharynx the material in the crypt can not be expelled, or if expelled is held in the supratonsillar fossa, and in this case it follows the line of least resistance, which usually is deeper into the crypt. Thus there may be a crypt, or number of crypts, enlarged at the distal end, or branching sinuses may be produced. This would perhaps account for the bismuth paste finding its way into three or four different crypts, as seen by Beck.

The crypt is lined by stratified epithelium. This membrane is much thinner than the surface membrane, and some observers assert that it disappears in the extreme depth of the crypt. At places in pathologic glands this crypt lining is very thin, from the presence of great numbers of lymphocytes, which seem to separate the lining membrane cells. The subepithelial tissue is also lost in the crypt, the lymphoid cells coming in direct contact to the crypt wall.

BLOOD VESSELS OF THE TONSILS

The blood supply of the tonsil is derived from (a) the tonsillar artery, which is a branch of the external maxillary near its origin from the external carotid; (b) from the ascending pharyngeal, which is given off from the external carotid just above the bifurcation of the common carotid; (c) from the ascending palatine, a branch of the external maxillary; (d) from the dorsalis linguæ by one or two branches from the lingual.

These arteries supply the tonsil and tonsillar space as follows:

(*a*). The tonsillar artery is given off from the external maxillary, a branch of the external carotid (Figs. 3 and 4). It passes upward and forward under the jaw and the internal pterygoid muscle and under the styloglossus into the loose fatty tissue of the pharyngomaxillary space. At or below the middle of the tonsil the artery gives off a branch which passes to the buccopharyngeal fascia which covers the superior constrictor muscle externally. Here the artery divides into a superior and an inferior branch. These two branches pass through the superior constrictor muscle and divide on the capsule of the tonsil into numerous ramifying branches, which enter the tonsil along the trabecular bands. In hypertrophied tonsils this artery is sometimes large and may cause troublesome hemorrhage.

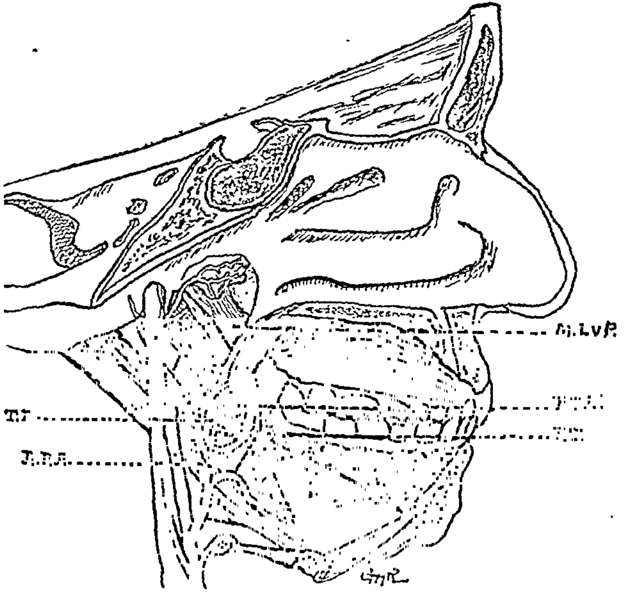

Fig. 6.—T. P., tonsilla palatina; A. P. A., A. palatina ascendens; P. T. A., pillaris tonsilla anterior; R. T., ramus tonsillaris; M. L. V. P., M. levator veli palatini. (After Toldt.)

(*b*). The ascending pharyngeal is a small branch of the external carotid. It is a long, slender vessel, deeply seated in the neck beneath the other branches of the external carotid and the styloglossus muscle. It arises from the back part of the external carotid near the origin of the vessel and passes up to the under surface of the base of the skull, ascending the neck between the internal carotid and the side of the pharynx, lying on the rectus capitis anticus major muscle. It gives off a tonsillar branch opposite the tonsil which passes forward on the superior constrictor muscle, which it pierces and then divides into ramifying branches on the tonsil.

It also sends branches to the Eustachian tube and soft palate. Above the edge of the superior constrictor muscle it gives off the descending palatine which passes under the constrictor muscle and anastomoses with the ramifying branches of the tonsillar or ascending palatine artery (Figs. 3, 4, 5).

(*c*). The ascending palatine, a branch of the external maxillary, passes up between the styloglossus and stylopharyngeus to the outer side of the pharynx, after supplying these muscles, the tonsil and the Eustachian tube (Figs. 5, 6). It divides near the levator palati into two branches; one follows the course of the tensor palati, supplying the soft palate and palatine glands, the other passing to the tonsils, which it supplies, the branches anastomosing with the tonsillar artery when present and descending palatine branch of the ascending pharyngeal.

(*d*). The dorsalis linguæ arises from the lingual artery at the anterior margin of the hyoglossus muscle, ascending to the dorsum of the tongue. It supplies the mucous membrane of the tonsil, the palatine pillars and the epiglottis, anastomosing with its fellow from the other side and the ascending palatine or tonsillar artery (Figs. 4, 7, 8).

ANATOMIC RELATIONSHIPS

The tonsil is in relation in front, with the anterior pillar; internally, with the oropharynx; above, with the supratonsillar space; externally, with connective tissue external to which lies the superior constrictor muscle of the pharynx. "The pharyngomaxillary space lies external and behind the tonsil. The "pterygopharyngeal space[2] is an irregular conical space, more or less triangular in cross section (Fig. 9). It contains a varying amount of fatty areolar tissue, in which lie the ascending palatine and tonsillar arteries. It is bounded externally, by the internal pterygoid muscle; internally, by the wall of the pharynx; posteriorly, it communicates with the fatty tissue of the pharyngomaxillary space which lies adjacent to the posterolateral wall of the pharynx. In the pharyngomaxillary space lie the internal and external carotid arteries, the internal jugular vein with its branches, the vagus and hypoglossus nerves and the styloid muscles. The tonsil rests on the medial side, and is therefore separated by the fascia and fat of the space from the pterygoid muscle and mandible against which it is pressed."

The internal carotid lies backward from the tonsil at a distance of 1.5 cm. and the external carotid backward and outward at a distance of 2 cm. They are therefore separated from the tonsil by the superior constrictor and the stylopharyngeus and to some extent the styloglossus muscle (Figs. 1, 2, 9).

The Eustachian Tube.—The Eustachian tube lies just above and a little behind the tonsil at a distance of 1 to 1.5 cm. and in cases of hypertrophy of the gland upward and outward it often extends along the course of the tube, causing tubal occlusion or inflammatory reaction by continuity of tissue (Fig. 2). This is a frequent cause of tinnitis aurium.

CERVICAL LYMPHATICS

The tonsil has for its afferent lymphatics the deep branches from the nose and some branches from the tongue. The efferent branches empty into both superficial and deep cervical chains through the peritonsillar glands which lie external to the internal jugular and in close relation to it. (This chain encircles the jugular.) These glands can be demonstrated in children as the glands commonly removed by surgeons for tuberculosis. The lymph from this chain of glands is emptied into the jugular trunk, which, with the lymph from the subclavian trunk, is emptied directly or by means of the thoracic duct into the vena cava. There are numerous anastomotic branches between these glands, and the flow of lymph is not always in one direction. It may flow in any direction, seeking the line of least resistance through these anastomotic branches. This accounts for infection being carried differently at different times. If the current were constant in its direction infection would travel in one direction only.

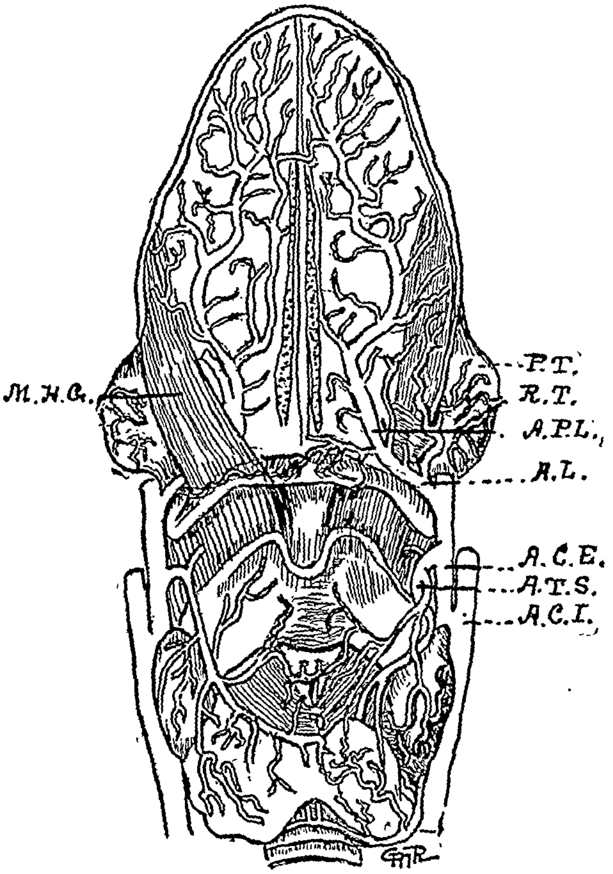

Fig. 7.—M. H. G., M. hyoglossus; P. T., tonsilla palatina; R. T., ramus tonsillaris from A. palatina ascendens; A. P. L., A. profunda linguæ; A. L., A. lingualis; A. C. E., A. carotis externa; A. T. S., A. thyroidea superior; A. C. I., A. carotis interna. (After Toldt.)

PHYSIOLOGY OF THE TONSIL

The true function of the tonsil has to do with early life and at birth the gland is so small as to be unimportant. It attains its full development by the sixth or eighth year and then begins to atrophy. By the age of twelve or fourteen it has completely disappeared or shows as a hypertrophied or a cicatricial mass between the palatine pillars. Any tonsil which is visible to any marked degree later than this may be considered as a morbid growth due to disease.

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[2] Wilson: Anatomy and Physiology of the Tonsil, The Journal A. M. A., May 26, 1906, xlvi, 1593.

It has been stated by some writers that children with adenoids and enlarged faucial tonsils are backward mentally. In a report of examinations of school children those of certain ages were compared both as to the presence of lymphatic growths and the grade obtained in school. It was determined that at the age of six 40 per cent. of children had adenoids and tonsils; those at the age of eight, 32 per cent.; those at the age of ten, 20 per cent., and those who had reached the age of twelve had 15 per cent. Therefore, if children of six years of age be compared with those of eight, we will find 8 per cent. more having adenoids and tonsils than those at eight years. Children at eight years will have 12 per cent. more than those at ten, while those at ten will have 5 per cent. more than those at twelve years. The backward student will have a less percentage than his associate in school who is younger and brighter in his school work. This statement must be modified, however, because students of eight years will be few in number and of these few probably all will show the presence of adenoids and tonsils, which might prove the child with these growths was really backward.

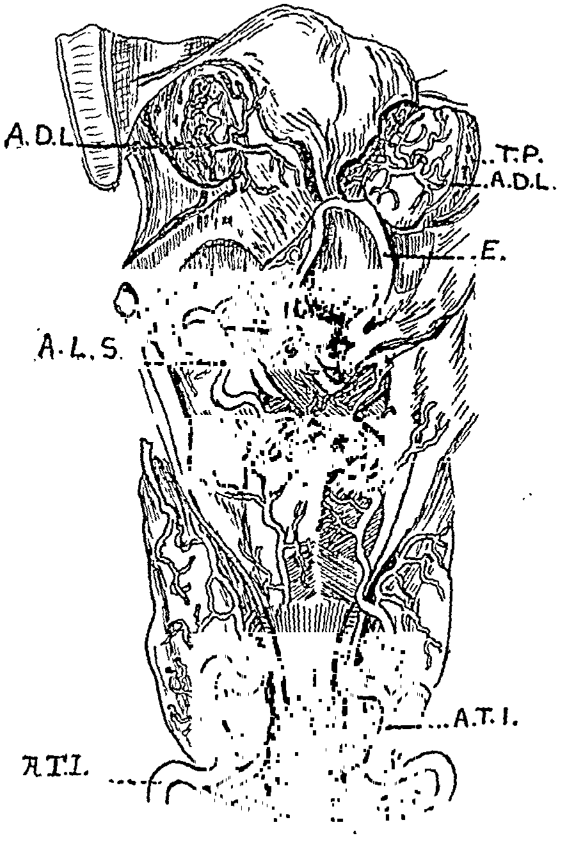

Fig 8.—A. D. L., A. dorsalis linguæ; A. L. S., A. laryngea superioris; E., epiglottis; T. P., tonsilla palatina; A. T. I., A. thyroidea inferioris. (After Toldt.)

Clinically, nearly all children at six have adenoids and tonsils; at eight, probably 85 per cent.; ten, 35 per cent., and at twelve, about 15 per cent.

It has always been understood that the tonsil was responsible for most of the diseases of childhood and many of the circulatory, respiratory, as well as nervous diseases.

It is probable when the child has a pathologic condition of this structure that all kinds of infections may occur. The tonsil can be infected by cultures applied on the investing membrane and more easily by introduction of bacteria into the crypts where the mucous lining is less of a barrier on account of its thinness. Various infections may be traced to the tonsil as a portal of entry, but this phase of the subject is not in the scope of this paper. Some authors claim the tonsil as a part of the digestive tract, basing their view on the idea that in respiration, unless the gland is pathologically hypertrophied, the tonsil is cut off from the ingoing current of air; because when the mouth is closed in the act of respiration the tongue is pressed back and the posterior pillars contract so that they nearly, if not quite, meet in the middle line. This presses the faucial tonsil against the base of the tongue and covers it by the posterior pillars, so that the ingoing current of air does come in contact with it.

It is said that the lymphocytes pass into the stomach, having escaped from the tonsillar crypt, and in the stomach become the salivary follicles aiding in digestion. It is also said that particles of food are forced into the tonsillar crypt during deglutition and here act as irritants, being partially at least digested in this place, or produce, as a result of their influence on the tonsil, the production of antibodies or antitoxins.

In contradiction to this theory it is found that if pieces of healthy tonsils are ground with water and the solution filtered the fluid produced will have no effect on albumin or beef broth, showing the absence of enzymes in the product of the tonsil, and therefore that the digestive function is *nil*. The same fluid placed in a test tube with typhoid or the commoner forms of germs all have a like turbidity, showing the bactericidal property wanting.

One author has the idea that the endothelium in the crypt undergoes a transformation into lymphocytes which enter the tonsil from without inward, but this has never been proved to the satisfaction of others.

We are told by Stöhr that the true physiologic function of the tonsil lies in the lymphoid nodules. In these nodules the center, which is termed the germ center, breaks down, changing the lymphoid tissue into lymphocytes. These lymphocytes are migratory cells and escape into the crypt in quantity through the mucous membrane lining, and thus find their way to the surface of the gland, carrying with them digested bacteria and effete material—phagocytosis.

It is known that the presence of lymphocytes exercises no influence on bacteria unless aided by some more developed leucocyte. If there is inflammation or infection in a gland it is the function of the eosinophiles to pour out opsonins, after which the lymphocytes will march up in quantity, surround, digest and carry off the residue. It is probable that the eosinophile is a product of some organ other than the tonsil, so the tonsil can not be considered an organ of destruction for bacteria, as it cannot do this without the assistance of some other tissue, probably the spleen or bone marrow in which the eosinophile is formed, which seems essential to the phagocytotic function..

So far as I can learn, the physiology of the tonsil, as we know it, has been limited to the study for the most part of pathologic glands, and has not included the so-called normal tonsil, which marks its decline after the sixth or eighth year.

If the tonsil in a normal state is removed *in toto* there is no disastrous after effect, as in the case of the thyroid. On the other hand, the individual is improved in health; in the young this is simply from the fact that respiration is carried on in a proper way by not being impeded by a mass which acts as an obstruction.

After the age of six or eight years, when the function of the tonsil begins to disappear, the general condition of health is invariably improved by the removal of the gland. It is a common occurrence for these patients to gain one or two pounds a week after removal of the glands. This is produced in one of two ways; first, by the removal of an obstructing mass to respiration; second, by removal of an infecting focus.

It is probable that the lymphatics of the nose, nasopharynx and oropharynx, have some function with the formation of the face and the accessory cavities of the nose, and therefore it appears to me that their function is an ancestral or developmental one. This is reasoned from the fact that they are present *ad maximum* during the time when such changes are taking place. Thus at birth the superior maxilla is only partly formed. The orbit is well formed, as is the mouth, but the mouth lies almost in direct contact with the lower border of the orbit, the rudimentary teeth being the only tissue separating the two cavities. The body of the sphenoid bone is not developed, the sphenoidal sinus being a small cavity not more than 2 or 3 mm. in diameter; the ethmoidal cells are mere depressions in the middle turbinal; the frontal sinus can not be seen, as the two frontal plates have as yet not separated, and the antrum of Highmore is only a small slit 3 or 4 mm. in length, situated between the nasal cavity and the infraorbital foramen, just inward and below the orbit, while the nasal bones are simply small projections in the beginning of formation.

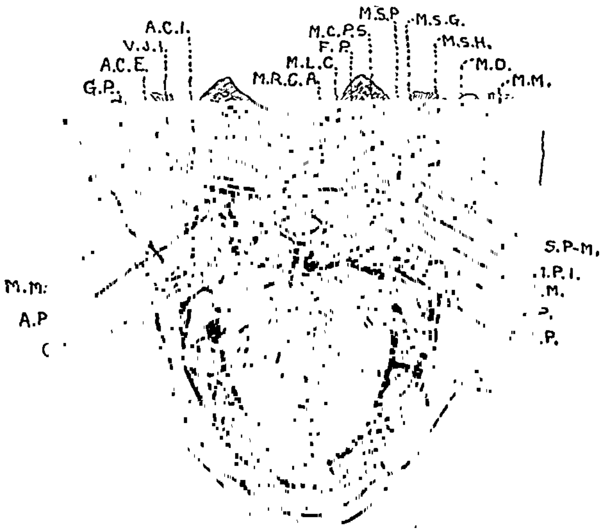

Fig. 9.—Showing relation of parts after Toldt): A. C. I.. A. carotis interna; V. J. I., vena jugularis interna; A. C. E., A. carotis externa; G. P., glandula parotis; M. R. C. A., M. rectus capitis anterior; M. L. C., M. longus capitis; F. P., fascia prævertebralis; M. C. P. S., M. constrictor pharyngis superior; M. S. P., M. stylopharyngeus; M. S. G., M. styloglossus; M. S. H., M. stylohyoideus: M. D., M. digastricus; M. M., M. masseter; S. P. M., spatium pharyngomaxillaris; M. P. I., M. pterygoideus interna; R. M., ramus mandibulæ; T. P., tonsilla palatina; A. G. P., arcus glossopalatinus; A. P. P., arcus pharyngopalatinus.

It seems to me that the lymphatics of the nose, nasopharynx and oropharynx were occupied with the process of katabolism after the blood had at least in part finished the process of anabolism. In this manner the broken-down tissue finds its way into the deeper lymphatics of the nose and from thence through the postpharyngeal, tonsillar and submaxilliary glands into the general lymphatic current. It may also be possible that the tonsils are stimulated by this process into producing some substance which is given to the blood, which in turn regulates some function which is active at this period of tissue formation and absorption.

It is evident that if we are to ascribe any function to the glands it must be one which is active during the first part of the child's life or between the first and sixth or eighth year, at which period the gland has already passed its height of usefulness in the economy and is beginning to disappear by atrophy.

It is claimed that the tonsil, in particular cases, has come to have a function in modulating the voice. This, however, I look on as a mere matter of education, and the singer or speaker would have come to modulate the voice just as well without this gland as with it. On the other hand, we have all seen cases in which voice was increased in tone and volume by the removal of these growths. The richness of quality and volume of tone is often added to 100 per cent. after the enucleation, provided the pillars remain intact and are not bound down or together by cicatricial tissue. I have observed four patients in whom there was loss of voice who were relieved by removal of the tonsils. These individuals are usually affected in one register, more frequently the middle.

The removal of tonsils in the adult can not be studied in this connection, however, as the presence of such growths is a pathologic phenomena.

I still believe that tonsils after the sixth or eighth year of life are pathologic in their character and as such are productive only of detrimental influence in rendering the individual unable to cope with infections of various kinds, and thereby working a hardship to the general economy.

It is true that I am making a rather sweeping statement as regards the function of this gland and one which may bring much criticism by the members of the profession, but it seems to me the investigations so far as published by the various writers are of little value, having been observed from an erroneous viewpoint.

100 State Street.

CONDITIONS OF THE FAUCIAL TONSIL WHICH CALL FOR OPERATIVE INTERFERENCE*

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The conditions of the faucial tonsil which call for operative interference may be divided into two classes: (1) Simple hypertrophy causing interference with respiration; (2) diseased conditions of the tonsils themselves causing local or constitutional infection.

SIMPLE HYPERTROPHY

While tonsils have been removed from time immemorial—it was certainly done by the ancients—it is only of late years that much study has been given to the evils of mouth breathing and attention drawn to the improvement in the health and morale of children after proper breathing has been restored.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

It is by no means unusual to see children who are irritable and often possessed of vicious traits become gentle and kind, dullards to show a new vivacity and the slovenly youth to awaken to a sense of order and decency. Witnessing these results, we often hesitate to mention the lasting effects and often marvelous changes subsequent to tonsillar operation, lest we be considered too enthusiastic.

This subject, however, has been taken up by educators and public health officials and has their hearty approval. One of the earliest to note the improved morale of children whose tonsils had been successfully removed was Dr. John J. Cronin, at that time chief of the department of child hygiene of the Health Department of New York City.

In the efforts to stamp out trachoma all defects among school children were noted, and a large number of children were found with hypertrophied tonsils, usually associated with an adenoid growth. These children were advised, by postal cards sent to the parents, to see their physicians, and so it came about that a large number of school children appeared in the various dispensaries of the city. At first the school nurse or inspector of the department accompanied them, but afterward the parents brought the children, and a large number were operated on. Among them were one class of children from a school where those who were continuously deficient were sent, so that it was known as the school for defectives. The principal of this school noticed, to her surprise, that some of these children improved wonderfully in their studies, as well as in deportment, and she became an enthusiastic advocate of an operation that would help these especially unfortunate children to become useful members of the community. Some of the children showed an improvement of 100 per cent. over their former ability to work and in behavior.

A brief report from Cronin's[1] description as to what happened subsequently may be of interest:

> There was a special class of defective children, composed of backward and incorrigible children, truants and so-called impossibles examined by an inspector who devoted his entire time to diseases of children. Of 150 children, 13 had defective vision and the remainder had an adenoid or enlarged tonsil or both. Special effort was made during six months to have these children operated on. Parents were neglectful (often too poor to lose the time to go to the hospital for operation, frequently not having car fare to travel the distance), and only 56 of these were attended to.
>
> It was thought justifiable to get what scholastic results would be obtained if these children were operated on collectively. Written consent was readily obtained from the parents to perform the necessary operations, and on June 21, 1906, 81 children were operated on in the afternoon by my two assistants, Dr. Yankauer and Dr. Ballin and myself.
>
> Six months later 76 of these children were re-examined and without exception they had all been promoted and were doing well in advanced grades.

To meet the exigencies of the examination by the medical inspectors of schools certain rules have been formulated for their guidance. It must be remembered that no previous history is obtainable, and also that no further examination than depressing the tongue with a wooden spatula (which is immediately thrown away) is permissible. Hence, only such tonsils as interfere with proper respiration, thus retarding development, are considered in the recommendation for removal. Full notes of the condition found are made, a notice of the recommendation of the inspector is mailed to the parents or guardians of the child and evidence is subsequently required that a physician has been consulted. When there is neglect the school nurse often interviews the parents and tries to convince them of the need of the child. Occasional complaints have arisen that children were refused instruction unless they were operated on, but investigations show these to be apparently unfounded. This public work of such vast importance has now been taken up throughout the civilized world and none of us will gainsay its appropriateness and lasting value.

DISEASED CONDITIONS OF TONSILS CAUSING INFECTION

Passing to the second classification I shall deal first with such affections of the tonsil itself that indicate the need for extirpation and secondly with constitutional disturbances associated with and dependent on a diseased state of the tonsil. The most common of all these in the first category is acute lacunar or follicular tonsillitis, with its onset of high fever and general disturbance, sore throat and deposit on the tonsillar surface, the latter often making a clinical differentiation between it and diphtheria impossible without a bacteriologic examination.

It is most common in children, and recurrences of the attack are the rule. In some children the recurrences are so frequent as to make them lose much time from their school work for many months of the year.

I recall the history of two brothers in my practice who had had so many attacks of tonsillitis of this variety that they were rarely free from attacks for two consecutive months. A physician previously consulted invariably injected antitoxin as a precaution, and they dreaded his approach. Extirpation of both tonsils with adenoids has cured the boys completely.

Peritonsillar abscess is practically a disease of adult life, although, through the courtesy of Dr. Sara Welt, I have recently seen this affection, in which streptococci were found, in a child of ten months. Cornet[2] reports a case of this affection in a child aged nine months. Here also recurrence is the rule, unless the tonsil is effectively removed.

Milder degrees of inflammation in the tonsillar crypt occur often—a raw surface is left and particles of food become attached and undergo putrefaction. If persistent these conditions are apt to give rise to much annoyance, and the remedy lies in operative procedures. One of the most persistent of affections of the tonsil is mycosis leptothrica, or hyperkeratosis, "characterized by white projections from the crypts and orifices of the lymph follicles on the posterior and lateral pharyngeal walls and on the lateral glosso-epiglottidean folds" (Wood). This does not, as a rule, create much discomfort and becomes a source of annoyance chiefly when discovered by the patient.

I saw a young woman with this affection, who had been mistakenly quarantined for diphtheria, and when the bacteriologic report was negative the suggestion of tuberculosis was made. She came in great excitement but left in high glee with a paper marked "mycosis leptothrica" to show her attending physician. In this case a complete cure was obtained by extirpation of the tonsillar mass in a much more rapid manner than the tedious one of cautery to the individual growths. We are accustomed to view this affection among the minor ones, but Metzner[3] reports a case with fatality.

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[1] Jour. New York Inst. of Stomat., December, 1907, ii, 272.

[2] Bull. de laryngol., otol. et rhinol., 1903, vi, 35.

Cartilage and bone formation of the tonsil are by no means frequent and cases have been recorded of recent years by Reitmann,[4] Compaired,[5] Newcomb,[6] Genter,[7] Ruckert,[8] Schweitzer,[9] Carter,[10] Halkin,[11] Landa,[12] Scheven,[13] and Anders.[14] The latter reports a tonsillolith weighing 147 grains. Schweitzer[9] found bone and cartilage foci in 11 of 33 bodies examined. There were several such in one and the same tonsil and a transition of the foci into connective tissue was often noted. It is not a congenital disturbance, but is due to a metaplasia of the connective tissue into cartilage and bone as a result of previous inflammation. Microscopically there is found atrophy of the lymph adenoid tissue and connective tissue proliferations. Total extirpation is advisable.

Of the benign growths occurring in the tonsil, in which complete extirpation is advisable, Mancioli[15] and Glas[16] have presented monographs. The latter records five cases, two of fibroma, one polyp of mucous glands, two teratoid new growths, and one a lymph vessel ectasia. Primary sclerosis is described by Glas[17] and Steiner.[18] Papillomata, true and false, are presented by Yearsley[19] and Tweedie[20] showed a tonsil apparently composed of a mass of papillomata. Blanc[21] reports a polyp of the tonsil and a dermoid polyp is reported by Angier and Lavrand.[22] Teratoid growth of an interesting nature is noted by Iwata[23] and Fullerton.[24] Lipoma of the tonsil is recorded by Theisen,[25] Deile,[26] Zolki,[27] and Sommer.[28] Epithelial cysts of the tonsil are recorded by Degny,[29] and Wright[30] in his usual thorough manner describes cysts in lymphoid tissue. A lymphoid tumor extirpated and cured is reported by Lavrand.[31] Excision of a tonsil affected with primary syphilis has been done by Wroblewski,[32] a procedure I hardly feel warranted in advising. Greene[33] has removed diseased tonsils and adenoid tissue to rid the throat of diphtheria bacilli. The malignant diseases of the tonsil, endothelioma, epithelioma, sarcoma, lymphosarcoma, and carcinoma, require more than extirpation of the tonsil and do not belong to the conditions under discussion.

The subdivision of this second class is constitutional affections entering the system by way of the tonsil and produced by tonsillar disease.

Ten years ago I presented my views and those of others on the tonsils as portals of infection,[34] and stated that certain forms of infectious diseases follow closely on tonsillar affection, the same micrococci existing in the former as in the latter, and hence are mentioned as being tonsillar in origin. The list of diseased states that follow the various forms of angina has become formidable and we should regard the tonsillar affection with the import its existence requires. A year ago I[34] stated that infection in rheumatism and gout enters the system by way of the mouth, the opinion of the majority being that the chief point of entrance is the tonsil. A careful study of the voluminous literature of the subject does not change in any way the opinion then expressed, and for the requirement of the matter under discussion we quote from Adler:[35] "I would most emphatically endorse the position taken regarding the treatment of the tonsils, viz., that inflamed tonsils are a source of danger to the individual possessing them and that recurrent tonsillitis constitutes a positive indication for the ablation of the tonsils."

The masterly essay of Wood[36] on the importance of the upper respiratory tract in the etiology of cryptogenetic infections, especially in relation to pleuritis, is so recent and contains so full a reference to the important literature of the subject that repetition would be superfluous. He calls attention to the following affections associated with or dependent on tonsillar disease: Tuberculosis of the lungs with and without tuberculosis of the tonsils, rheumatism, general infection, nephritis, tenosynovitis, endocarditis, bronchitis, pneumonia, pleurisy, appendicitis, jaundice, phlebitis, meningitis, parotitis, skin and eye lesions.

The relation of angina tonsillaris and appendicitis has been discussed editorially in THE JOURNAL of the American Medical Association,[37] and Weber[38] reports a case of these conditions occurring.

P. K. Brown[39] refers to a case of nephritis after tonsillitis and says that the kidney complication is more frequent than is generally known, and he mentions three other cases, apparently traceable to diseased tonsils. These are acute mania, septicemia, and leukemia. The *New York Medical Record*[40] quotes Hougarde as describing six cases of acute nephritis associated with hypertrophied tonsils. One was mentioned as showing the good effects of a tonsillectomy on the nephritis. H. B. Gardner,[41] writing on secondary effects on the system which may be produced by chronic enlargement of the tonsils, says the hypertrophied tonsils may be a causal factor for varicose veins of the leg and hernia. Regarding the relation of the tonsil to hyperthyroidism I quote from a recent article on "Some Relations of the Thyroid Gland" by S. P. Beebe.[42] He says:

> In another group of cases there is fairly good evidence that the disturbance of any infectious disease, notably tonsillitis and typhoid, has been the primary event in the abnormal thyroid physiology. It has been customary to explain these cases by supposing that the thyroid is called into unusual activity in order to combat the toxemia in the disease and that from this beginning the vicious circle is continued. There is no doubt that hyperthyroidism often follows tonsillitis, but Beebe believes this may follow as a result of a vasomotor dis-

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[3] Berl. klin. Wchnschr., 1889, No. 29, p. 653.
[4] Monatschr. f. Ohrenh., 1903, xxxvii, 321.
[5] Arch. internat. d. laryngol., Paris, 1904, xviii, 155.
[6] Med. News, New York, Sept. 24, 1904, p. 581.
[7] Vrach. Gaz., 1904, x, 789.
[8] Virchow's Arch. f. path. Anat., 1904, clxxvii, 387.
[9] Diss., Freiburg, 1905.
[10] Med. Rec., New York, Feb. 4, 1905, lxvii, 174.
[11] Bull. Acad. roy. de méd. de Belgique, 1905, xix, 383.
[12] Rev. de med. y. chirurg. de la Habana, 1907, xii, 495.
[13] Arch. f. Laryngol. (Fraenkel's), xx, 1907, 20.
[14] THE JOURNAL A. M. A., April 11, 1908, l, 1191.
[15] Arch. ital. di otol., 1902, xiv, 471.
[16] Virchow's Arch. f. path. Anat., 1905, clxxxii, 91.
[17] Wien. klin. Wchnschr., 1903, xvi, 890.
[18] Pest. med.-chir. Presse, 1903, xxxix, 380.
[19] Med. Times and Hosp. Gaz., 1903, xxxi, 257.
[20] Proc. Royal Soc. Med., Laryngol. Sect., 1907, p. 70.
[21] Rev. hebd. de laryngol., 1906, i, 136.
[22] Jour. Soc. méd. de Lille, 1903, i, 457.
[23] Dai Nippon Ji-Bi-In-Ko-Kwa-Kwai Kwai Ho, Tokyo, 1906, xii, 101.
[24] Brit. Med. Jour., 1907, ii, 963.
[25] Albany Med. Ann., 1903, xxiv, 37.
[26] Arch. f. Laryngol. u. Rhinol., 1903, xiv, 399.
[27] Ztschr. f. Ohrenh., 1903, xliv, 222.
[28] Arch. f. Laryngol., 1907, xix, 523.
[29] Bull. et mém. Soc. Anat. de Paris, 1903, series 6, v, 487.
[30] Laryngoscope, Sept., 1905, 681.
[31] Rev. hebd. de laryngol., 1904, i, 113.
[32] Gaz. lek., Warsaw, 1904, series 2, xxiv, 10.
[33] Laryngoscope, 1908, xviii, 660.
[34] THE JOURNAL A. M. A., Dec. 2, 1899, xxxiii, 1381.
[35] THE JOURNAL A. M. A., Dec. 9, 1899, xxxiii, 1491.
[36] Ann. Otol., Rhinol. and Laryngol., December, 1908, xvii, 355.
[37] May 11, 1907, p. 1602.
[38] München. med. Wchnschr., 1902, xlix, 2171.
[39] THE JOURNAL A. M. A., June 15, 1907, xlviii, 2024.
[40] Med. Rec., New York, May 12, 1906, lxix, 757.
[41] Lancet, Sept. 30, 1905, ii, 963.
[42] Therap. Gaz., Dec. 15, 1908, p. 844.

turbance rather than to suppose that the altruistic action of the thyroid has continued to an ungovernable condition.

In all of these conditions cure is often found to follow tonsillar removal, but the surest and safest guide will be, bearing in mind the many lasting conditions that follow on a diseased state of the tonsil, to study these organs carefully and by prompt extirpation prevent the *inroads of these dread disorders.*

With this presentation of the subject I feel warranted in presenting the following conclusions:

Unusual hypertrophy, including the submerged and degenerate variety, recurrence of inflammatory affections, including benign growths, or evidence of a diseased *state of the tonsil prejudicial to health, makes it* imperative on physicians to advise thorough extirpation of the tonsil.

25 East Seventy-seventh Street.

REMOVAL OF TONSILS*

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Without going into the consideration of anatomic details, I will proceed at once to the discussion of some of the various methods of dealing surgically with diseased tonsils. The complete removal of all tonsillar tissue that is at the time or is liable in the future to become diseased, with the incurrence of the minimum danger from hemorrhage or infection, constitutes an ideal to which we should strive in our operative technic. Any procedure short of this falls short of the ideal. At the same time circumstances arise which will not permit of the more [illegible] methods, in which case we adopt one [illegible] for the destruction of the lacunæ. The best of these consists in slitting the lacunæ which may be reached by means of a bent knife, and afterward cauterizing them with nitrate of silver fused on a copper probe daily until as many as possible are made to heal open. This is followed by benefit in a great number of cases, but is never permanently satisfactory. The use of the cautery (ignipuncture) *for this purpose* or for destroying or removing tonsillar tissue, is not nearly so satisfactory as the cold methods, inasmuch as the pain at the operation and the reaction is very much greater and the results are not so satisfactory. If the tonsil is to be removed we may proceed in various ways.

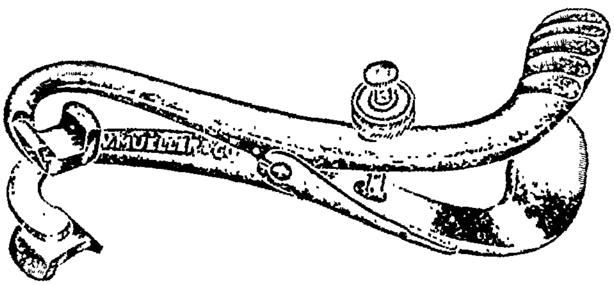

Fig. 1.—Pierce's mouth gag. Spring ratchets are apt to get out of order or slip; they do not allow the slight adjustments of the screw that is used for the setting mechanism of this gag.

In all cases there should be a period of preparation. It is a great mistake to underestimate the gravity of tonsillar excision. It is not an operation that should be performed at the office; it is necessarily a hospital operation, whether performed under a general or local anesthetic. The patient should preferably be sent into the hospital the day before the operation is to be performed. A careful history should be taken and general physical examinations made, together with a microscopical and chemical examination of the urine. Tonsils should not be operated on while in a state of inflammation, as this is the cause of the majority of severe hemorrhages following their ablation. Women and girls should not be operated on while menstruating. Special care should be taken to detect the status lymphaticus and to elicit a history of hemophilia; and on inspection we should be careful to note the presence of pulsations in or about the tonsils. This leads me to say that we can *only partially ascertain what we wish to know regarding* the tonsils by inspection, which should always be supplemented by palpation. In this way we can ascertain deeper pulsations, the extent of the tonsils as well as the presence of bony or other deposits in the tonsil, *and the presence of a projecting styloid process.*

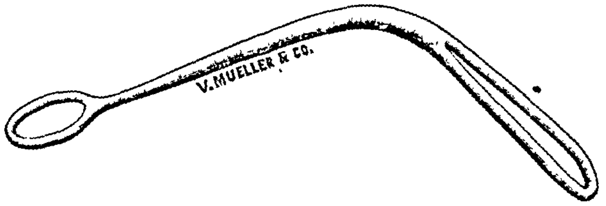

Fig. 2.—The advantage of this tongue depressor is that it does not crowd the tongue backward, thus interfering with respiration, as does the broad depressor.

A course of calcium chlorid for a week preceding the operation has an influence in reducing the hemorrhage at the time of operation. If there is doubt as to the coagulability of the blood, its index may be ascertained. The bowels are emptied by a cathartic the night before, and if necessary by an enema in the morning; no food is taken on the day of operating if the operation is performed in the morning and only a very light breakfast if performed in the afternoon. A hypodermic administration of a dose of atropin a half-hour before the operation in adults and older children, or of belladonna in young children, will decrease the amount of secretions during anesthesia.

ANESTHESIA

General Anesthesia.—This should be employed in all young children and in nervous adults. If adenoids are to be removed at the same time, as is usually the case, I am strongly of the opinion that deep narcosis is urgently to be advised. For this purpose, ether is used on account of its unquestionably greater safety over chloroform, although it has some disadvantages. The administration of the anesthetic may be by means of a pipe introduced around the corner of the mouth, the ether fumes being pumped from a receptacle by means of a double rubber bulb, or a closed mask may be used. The closed mask does very well if the anesthetist will

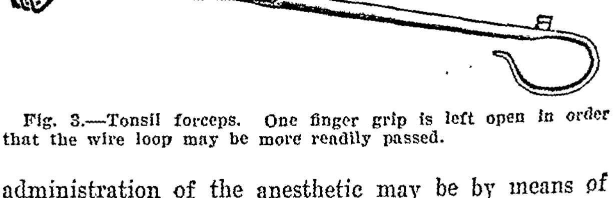

Fig. 3.—Tonsil forceps. One finger grip is left open in order that the wire loop may be more readily passed.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

reapply the anesthetic whenever the operative procedures are interrupted, if only for an instant. The open or gauze mask is not nearly so satisfactory as the closed one, because with the former a deep anesthesia is very much more difficult to maintain. The advantages of deep, tranquil anesthesia can not be too strongly insisted on. There is greater safety for the patient; the operation proceeds much more rapidly, and with greater exactness. It must be remembered that the deep pharyngeal reflexes are among the last to disappear, and we may proceed with an operation on the mastoid or with an amputation of a limb at a much earlier stage than is best for a tonsil or any throat operation.

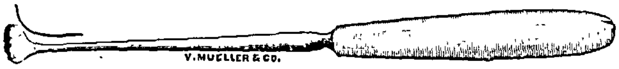

Fig. 4.—Pierce's tonsil knife.

In order to aid in the abolition of the deep pharyngeal reflexes, after the patient has become relaxed, we may swab the tonsillar regions with a 10 per cent. cocain in 1 to 1000 adrenalin solution. Occasionally, we may have cases in which ethyl chlorid may be a sufficient anesthetic, but these are rare. There can be no dissecting done, and the tonsillar tissue must be of that pedunculated type which may be properly removed by means of a tonsillotome. Nitrous oxid is less satisfactory than ethyl chlorid.

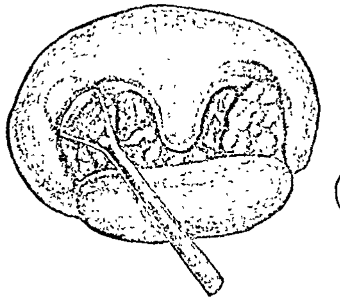

Fig. 5.—Pierce's tonsil knife being inserted into the supratonsillar space.

LOCAL ANESTHESIA

This is reserved exclusively for older children and adults who can be controlled. The tonsil, posterior and anterior pillars, posterior wall of the pharynx, and arch of the velum are painted over with a 10 per cent. cocain solution. This is also rubbed into the crypts and supratonsillar space, by means of cotton wrapped on a bent cotton applicator. The cocain solution is followed by adrenalin solution, 1 to 1000, applied over the same area, and when a surface anesthesia has been procured, a 1 per cent. cocain solution, containing two drops of 1 to 1000 adrenalin to the ordinary hypodermic syringeful is injected on each side at three points, namely, at the base, at the middle, and at the upper confines of the tonsil, ascertained by means of palpation; from three to five drops at each point is sufficient. I have found local anesthesia in tonsillar work, except in those cases of pedunculated growth, more or less disappointing. Especially is this true in cases in which there has been considerable previous inflammation, and in which the submerged tonsil is encased in plastic fibrous tissue. This is particularly true when the snare is used, so that it is better to use a cutting instrument, the knife or scissors, such as the Robertson, in removing tonsils under local anesthesia.

When the general anesthesia is complete, a mouth-gag is inserted in the left side of the mouth well back. The mouth gag may become a source of great annoyance if improperly tended. If the jaws are opened too wide, respiration is interfered with, especially in young children, and its constant or inopportune displacement is exasperating. If there are but two assistants the anesthetist should have full charge of the mouth gag from the beginning to the end of the operation and should be held responsible for its proper manipulation (Fig. 1).

POSITION OF THE PATIENT

The position of the patient is an important matter. Doubtless, operators become accustomed to various positions as they become accustomed to different instruments, but after an experience extending over a number of years with the various positions, I have adopted the one to be described. The patient is placed on the right side, with the right arm crooked beneath the body, and the right leg semiflexed. The right side is chosen as throwing less of a burden on the heart of the patient. A sand-bag is put under the head which is drawn over close to the edge of the table. Another large sand-bag is shoved snugly against the back in order to keep the patient from rolling backward, or better, a nurse is employed to keep the patient balanced on the right side. In this position, safety is insured against the danger of blood or excised tissue getting into the larynx.

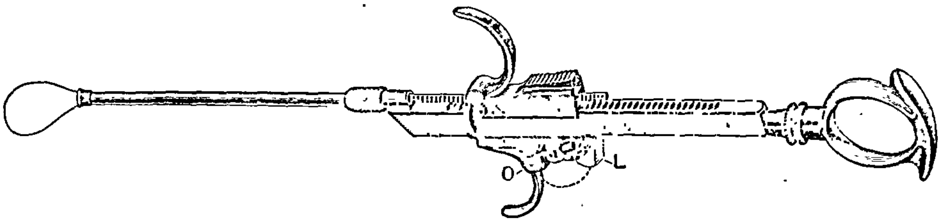

Fig. 6.—Pierce-Mueller tonsil-snare. The new snare consists of a flat steel bar having at its distal end a strong steel cannula with reinforced end. Notches are cut in the upper side of the steel bar and the lower side is milled out and contains the threaded rod for écraseur attachment. On this steel bar runs a carriage supplied with two half-curved finger-holds. In the upper portion of this carriage is an arrangement like a windlass and by pulling back the carriage (with wire-carrier and snare loop) this windlass drops into the notches in the bar and securely locks it, and prevents it from receding and letting loose the object once grasped.

On the lower side of this carriage is a lever in connection with a chuck, and this (when pulled backward) grips into the threaded rod which rests in the milled out part of the flat bar and converts the snare into an écraseur.

This new snare has none of the many springs of the older models of this type and there is very little chance for the instrument's getting out of order.

To load this snare push the carriage forward as far as it will go, by pressing on knurled lever A, set the wire-carrier so that the two holes only for the wire will show and place the ordinary snare loop in the wire-carrier. After placing the loop over the tonsil you may either pull right through, or,-as the carriage locks itself by means of a ratchet, you can stop at any point. In order to set the snare as an écraseur, pull the lever below the carriage from O (open), to L (locked), then turn the ring at the end of the flat bar until the tonsil comes off. To put snare in position for reloading, unlock it and push forward on lever A.

TECHNIC

The operator is seated so that his line of vision is on a line with the patient's mouth. This position may be acquired either by raising the table on blocks, or by the operator sitting on a low stool. The light is thrown into the field of operation by means of a mirror, reflecting the light on a movable bracket, or by means of an electric lamp of some form carried on the operator's head. A small tongue depressor (Fig. 2) is introduced, and the tonsil seized in a vulsellum forceps, the extremity of which is bent nearly at right angles to the shaft

(Fig. 3). One jaw is fastened in and beneath the base of the tonsil, and the other as far as possible into the supratonsillar fossa. By means of a knife the tonsil is freed from the supratonsillar roof and from the upper two-thirds of the anterior and posterior pillars. Various forms of knives have been used for this purpose. In the last three years I have used exclusively one which I have designed and found very satisfactory (Figs. 4 and 5). It is introduced with the blade upward into the supratonsillar space, and carried in this position first beneath the anterior pillar, and then downward along the posterior pillar. The tonsil is then twisted out of its bed. Frequently no more detachment is necessary. The whole tonsil up to its capsule can be dislodged. If this is not the case, however, by means of a scraping motion away from the gland the tonsil is dissected loose from its attachments, following along the line of demarcation, between the tonsil and the peritonsillar tissue. The moment the tonsil is delivered from the supratonsillar space, the snare is applied, being careful to get above and below the tonsil (Fig. 6). At this point it is essential to see that the uvula has not been included in the loop. In order to guard against this accident, it is well, before applying the snare, to secure the tip of the uvula with a long hemostatic forceps.

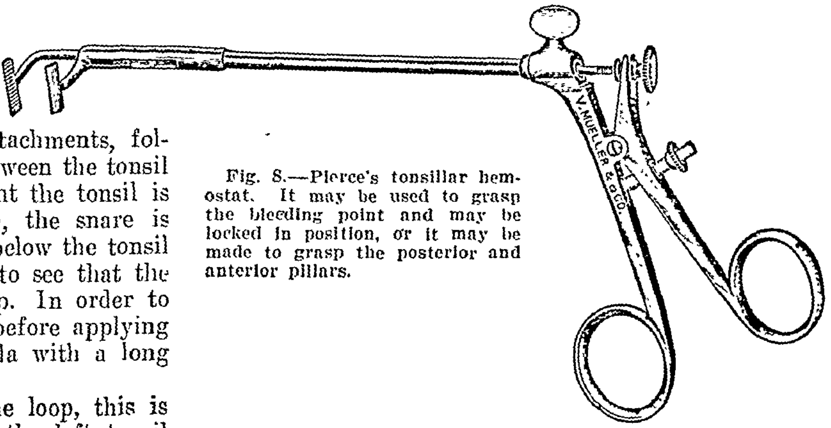

Fig. 8.—Pierce's tonsillar hemostat. It may be used to grasp the bleeding point and may be locked in position, or it may be made to grasp the posterior and anterior pillars.

When the tonsil is secured within the loop, this is tightened and allowed to remain while the left tonsil is freed. This is loosened from the upper portion of its bed in the same manner, and when the snare is tightened, we proceed with the complete removal of the right, and then follow with the left, as soon as the hemorrhage from the right has stopped. This means of hemostasis is successful in diminishing hemorrhage. If the hemorrhage continues unduly, pressure for a few minutes with a piece of gauze held in a hemostatic forceps will nearly always arrest it (Fig. 7). If properly done, the entire tonsil has been enucleated. If, however, from imperfect technic there remain portions of the tonsils, especially in the supratonsillar space, they must be thoroughly removed by means of either the snare or the tonsillar punch. Blood during the course of operation is carefully removed by an assistant by means of cotton torpedoes carried in long hemostatic forceps. Intelligent sponging is of the greatest assistance; done otherwise it may more interfere with than aid the operator.

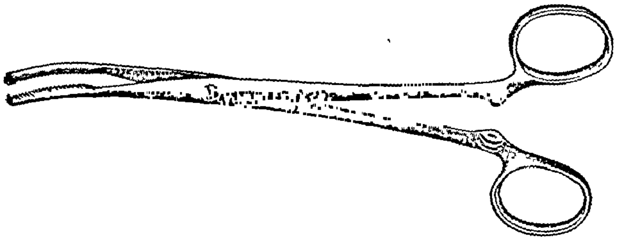

Fig. 7.—Long forceps used for sponges, which is also an effective tonsillar hemostat.

If local anesthesia is employed, the assistant should be stationed to the left, a little behind the operator, the instrument table being to the right. With a general anesthesia these positions are reversed if there is but one operating assistant, as he must manipulate the tongue depressor. If there are two operating assistants, and this is more to be desired, one should stand to the right and attend to the tongue depressor and mouth gag, while the other assistant sits behind and a little to the left of the operator and presides over the sponges and instruments—anticipating the operator's needs.

At least two assistants are necessary for the expedition and successful removal of tonsils under general anesthesia, one for the anesthetic, the other to sponge, hold instruments and attend to tongue depressor. Both require special training. The anesthetist should be able to recognize the stage of anesthesia at which the operation is best performed and to keep the patient constantly in this stage. This requires, especially in case the closed cone is used, constant vigilance, the anesthetic being reapplied whenever the operator's procedures are interrupted. Nothing is so annoying in tonsillar work as an improper anesthesia—it causes delay, adds danger and tends to render the work imperfect.

Do not be too hasty in allowing the patient to be removed from the operating-room. Carefully inspect the field just before the patient's removal for hemorrhage, and for the presence of tonsillar tissue that might have been overlooked at the operation. In case pressure does not control hemorrhage, careful search should be made for bleeding points. These are usually found at the middle third of the wound, and consist of the tonsillar artery or the venous plexus situated at this point, and may be controlled by (a) torsion with hemostatic forceps; (b) putting in a figure-of-eight stitch; (c) sewing the anterior and posterior pillars together with a pledget of gauze held down on the tonsil by means of the stitches or by means of Pierce's tonsillar hemostat, held *in situ* (Fig. 8). The Mikulicz compressor is a most cruel instrument, and should scarcely be employed. The pain it causes is excruciating and, if left on for any considerable time, it is liable to form a slough which may be so extensive as to form a fistula from the pharynx to the exterior or cause dysphagia and paralysis. Hemorrhages from tonsillar operations do not come from the external or internal carotid. These vessels are safely out of the way. There may, however, be a loop of the lingual thrown up into the base of the tonsil. In this case severe hemorrhage results, but it can be controlled either by means of a hemostat or a deep ligature. Chevalier Jackson's experience with tonsillar hemorrhage must be unique, as I have not yet seen a case which demanded ligation of the external carotid.

I have employed the method described for the past six years in cases of large, globular imbedded tonsil. For pedunculated tonsils, which project into the oral cavity, I do not hesitate to recommend the old Matthieu tonsillotome. The work is done rapidly, neatly and completely if the instrument is properly used. Instead of a snare, Casselberry is very dextrous in the use of the Matthieu tonsillotome, from which the fork and tripping mechanism has been dismounted. It is surprising how this instrument, after the tonsil has been detached from the pillars and the supratonsillar space, will follow the capsule; but in my hands it is more cumbersome than the snare, and does not so surely follow the capsule. The snare, when properly placed, really peels the tonsil from its bed. For long, thin, small tonsils, which are occasionally the seat of cholesteatomatous disease and cause fetor *ex ore*, the scissors are better adapted, after the method of Robertson, particularly when local anesthesia is employed.

After the operation, the patient should be kept in the hospital and in bed for from twenty-four to forty-eight hours. Food during this time should be liquid or semi-solid, without condiments. A gargle should be administered the day after the operation, and continued until the wound has entirely healed. For this purpose I recommend the following:

℞.	gm. or c.c.		
Salicylic acid	10		ʒiiss
Spirits of nitrous ether	15		℥ss
Alcoholic solution formal. (1-10)........		or	
Alcohol; āā	30		℥i
Oil of gaultheria			
Oil of caryophyl, āā....................	15		ʒss
Glycerin, q. s. ad.	120		℥iv

Sig.: Half a teaspoonful to half a glass of hot water, and gargle every two or three hours.

If pain is complained of, an ice-bag may be applied to the neck. Allowing the patient to chew bits of ice is not to be recommended, as the motion of the pharynx in swallowing and sucking is liable to perpetuate bleeding.

ADENOID OPERATIONS *

FRANCIS R. PACKARD, M.D.
PHILADELPHIA

The preliminary report of the Anesthesia Commission of the American Medical Association[1] shows the splendid results which the profession may confidently expect from its labors, and indicates likewise the vast scope of the field on which it has entered. It would seem presumptuous on my part to undertake any individual efforts in the study of the anesthesia problem at the present time, when we know that the whole subject is being so carefully and thoroughly studied. My justification for the following remarks, however, is to be found in the fact that, in operations within the nasopharynx and throat, there are certain peculiar problems which present themselves forcibly to the operator and render it imperative for him to understand them thoroughly, not only from the standpoint of the effect of the anesthetic on the safety of the patient, but also with a view of facilitating the proper performance of the operation.

As a general premise to the remarks in the following paper, I would state that, in my opinion, tonsil and adenoid operations in children and young persons below the age of 18 should practically always be done under a general anesthetic. In patients over 18 years of age, if they have sufficient self-control and their cooperation can be secured, I prefer to operate with local anesthesia by cocain.

There are certain general statements which may be regarded as true of all operations in which a general anesthetic is employed:

1. The personal equipment of the anesthetist is by far the most important factor in any operation under a general anesthetic. This would include his experience and judgment and all the other factors which go to give him a claim for ability to administer the drug. This personal equipment of the anesthetist is of so much importance that, to my mind, it almost overshadows the question of which is the safer anesthetic to use, and although, as I shall state further on, in my opinion, the dangers of chloroform are so much greater than those of ether, if the anesthetist is used to administering chloroform, and I feel that he could give it bettter than he could administer ether, I would prefer him to use the anesthetic which he was accustomed to giving.

2. The patient should be under observation or control, whenever possible, for at least twelve hours before the operation, and after it until he has completely recovered from the effects of the anesthetic. It is very hard, particularly in children, to be sure that patients will refrain from food before taking an anesthetic. Twice I have nearly lost a patient because of his having eaten shortly before the operation. In one case a child stopped breathing because a piece of bacon became impacted in the larynx. In the other case a child's tonsils and adenoids had been removed, when he was observed suddenly to turn blue. No obstruction was found in the larynx, but artificial respiration, with the administration of oxygen, was maintained for fifteen minutes before the child took a natural breath. He then vomited an enormous quantity of undigested food. These cases illustrate the two ways in which the ingestion of food before the administration of an anesthetic is a source of danger: (1) by the lodgment of a piece of vomitus in the larynx, (2) by pressure on the diaphragm from a distended stomach.

3. Operations under general anesthesia should be done, whenever possible, in a hospital or in the patient's home and not in the physician's office. The extreme risk of allowing the patient to go out just after recovering from ether or chloroform has been repeatedly demonstrated.

4. If the operation is performed in a house or elsewhere than in a hospital, oxygen and other restorative means should be provided beforehand. I now always make it a practice, when operating in private houses, to have an oxygen apparatus at hand, and I believe that at least on one occasion when a child took ether badly its life was only saved by the use of oxygen. A tracheotomy tube and the few other instruments necessary for the performance of a tracheotomy are always carried in my bag when operating at a patient's home. In a case which occurred in the practice of one of my colleagues a piece of tissue from the throat completely occluded the larynx and the operator was obliged to perform an immediate tracheotomy in order to save the child.

5. Although there is a very prevalent impression in the profession that mixed anesthesia, in which the narcosis is started with one anesthetic and maintained with another, is dangerous, this would seem to be contrary to the facts according to available statistical tables. Thus W. Estell Lee[2] analyzed the statistic of the anesthesias at the Pennsylvania Hospital for a period of five and one-half years. In that period ether was given alone or in combination 5,592 times, and there were three deaths occurring in this number. All these fatalities occurred

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] THE JOURNAL A. M. A., Nov. 7, 1908.

[2] Ann. Surg., November, 1908.

among the 1,444 cases in which the ether was given alone. The same statement applied to the deaths which occurred under ethyl chlorid in the institution. Ethyl chlorid was given as a general anesthetic, alone or in combination, 5,575 times, with five fatalities. All these deaths occurred among the 947 cases in which the ethyl chlorid alone was administered. In carefully examining other large compilations of statistics, such as Gurlt's, one is impressed with the same fact.

There are several reasons which render the subject of anesthesia in tonsil and adenoid operations one of the greatest importance:

(*a*) Children who suffer from pathologic conditions of the faucial and nasopharyngeal tonsils are apt to present the condition which the French term "*lymphatisme*" and which we generally term the "status lymphaticus." The sufferers from this diathesis are notoriously bad subjects for the administration of any general anesthetic. W. Humes Roberts[3] summed up the views which are now generally accepted by pathologists in regard to that condition, namely, that there is a general enlargement of the lymphatic structures associated frequently with hyperplasia of the thymus gland and accompanied by a hypoplasia of the circulatory apparatus. Sudden death may occur in patients who suffer from this diathesis from very slight causes, such as shock, emotional or physical, frights or slight injury. Dr. Roberts reports four cases of death from the administration of chloroform for the removal of tonsils and adenoids, in Los Angeles. In the only case in which autopsy was permitted there was a marked status lymphaticus.

(*b*) The mechanical obstruction to proper respiration offered by the presence of adenoids and enlargement of the faucial tonsils is such that the inhalation of the anesthetic is interfered with so that its administration is prolonged and the amount necessary sometimes very large. This difficulty is also increased by the presence, in the throat in most of these patients, of great quantities of mucus. In several cases I have tried to overcome this difficulty by the administration of small doses of atropin some hours before the ether. The results, however, were not very satisfactory, as the dose necessary to induce dryness of the mucous membrane was found to be too large to be consistent with safety.

(*c*) Another difficulty encountered in the administration of a general anesthetic in these cases is the problem of not interfering with the operator. To obviate this I have my patients very thoroughly anesthetized before I undertake to do any work. After the operation has begun it takes so short a time to finish it that if the patient is completely under at the start, he seldom requires the further administration of the anesthetic before its conclusion. The best method of giving ether or chloroform, in my opinion, is the so-called drop method on gauze, except in patients who require any prolongation of the anesthesia, when I have the anesthetist change to the vapor method, passing the ether through warm water in a wash bottle by means of a bulb compression apparatus. The one designed by Dr. Pynchon, of Chicago, has proved satisfactory for this purpose.

The position in which the patient should be placed during the operation has been, and still is, a subject on which opinions differ largely. I always operate with the patient in the dorsal decubitus, with the head dropped somewhat over the end of the table. There is no doubt in my mind that the upright position adds greatly to the danger of ether and chloroform, and also that in the upright position the amount of blood and mucus which flows into the larynx or esophagus must be greater than when the head hangs lower than the body. Again I believe that the upright position adds to the risk of a piece of detached tissue entering the larynx and possibly causing dangerous obstruction. The danger of an aspiration pneumonia is by no means imaginary and no pains should be spared to lessen such a mischance.

As to the anesthetic for use in the operations on tonsils and adenoids, I have no hesitation in declaring my decided preference for ether. Some years ago Dr. Hinkel,[4] of Buffalo, read a valuable paper before the American Laryngological Association, in which he showed that there had been nineteen fatal cases from the administration of chloroform, one from A. C. E. mixture, and none from ether in these cases. I know personally of two unreported cases of death from chloroform and of not a single ether fatality in Philadelphia, in which the anesthetic was given for the removal of tonsils and adenoids. When it is considered that in Philadelphia ether is used in an overwhelmingly larger number of cases than chloroform, this seems a significant fact. I am aware that many will reply that in places where chloroform is more generally used there are fewer deaths, but I believe that only men who are familiar with its administration would dare use it in a city where its use is so generally deprecated. Statistics the world over show that the deaths from chloroform vastly outnumber those from ether; thus Gurlt[5] reports the following statistics:

	Cases.	Deaths.	
Chloroform	201,224	88	1: 2,286
Ether	42,141	7	1: 6,020
Chloroform and ether	10,162	1	1:10,162
A. C. E. (Billroth's)	5,744	1	1: 5,744
Ethyl bromid	8,967	2	1: 4,483

Seitz's figures, reported by W. J. McCardie,[6] are as follows:

Pental	1 death in	200	anesthesias
Chloroform	1 death in	3,000	anesthesias
Ether	1 death in	5,000	anesthesias
Ethyl bromid	1 death in	8,000	anesthesias
Ethyl chlorid	1 death in	16,000	anesthesias

W. H. Luckett[7] gives the following statistics:

	Cases.	Deaths.
Chloroform	4,263	1
Ether	4,673	0
Chloroform to ether	141	0
Ether to chloroform	116	0
Chloroform and ether	164	0
Cocain and chloroform	6	0
Cocain and ether	10	0
Cocain	706	0
Nitrous oxid	142	0

We should remember, as I have before stated, that tonsil and adenoid patients show a distinct tendency to take any anesthetic badly, rendering it imperative that the safest possible should be chosen.

Nitrous oxid anesthesia is of such short duration that its usefulness is decidedly limited. I have had no opportunity to try it used in conjunction with oxygen so as to prolong its effect.

Ethyl bromid has resulted fatally in so many cases in proportion to the number of times it has been used

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[3] The Status Lymphaticus, with Particular Reference to Anesthesia in Tonsil and Adenoid Operations, Trans. Am. Laryn., Rhin. and Otol. Soc., 1908.

[4] New York Med. Jour., Oct. 29, 1898.

[5] Statistics for 1890 to 1894 inclusive, in the Verhandl. d. deutsch. Gesellsch. f. Chir., Berlin, xx, xxi, xxii, xxiii, xxiv.

[6] Lancet, April 4, 1903.

[7] Medical News, New York, 1897, lxxi, 770.

DEATHS ATTRIBUTABLE TO THE USE OF A GENERAL ANESTHETIC IN THE REMOVAL OF TONSILS AND ADENOIDS

No.	Reporter.	References.	Operation.	Age.	Sex.	Anesthetic.	Remarks.
1	R. C. M. C. Smith	*Lancet*, 1892, i, 1158............	Adenoids removed by Lowenberg's forceps.	11	M.	Chloroform..	Death from failure of respiration, cyanosis, no pulse, no heart sounds on auscultation.
2	Anonymous......	*Brit. Med. Jour.*. 2, 18, 1893.....	Adenoids..........	10	F.	Chloroform..	Autopsy: Bronchi filled with blood.
3	Anonymous......	Report of *Lancet* committee, *Lancet*. 4, 1, 1893.	Adenoids..........	....	M.	Chloroform..	Death from syncope.
4	T. W. Bailey....	*Brit. M. J.*, 1893, i. 860.........	Adenoids..........	3	....	Chloroform..	Respiration ceased before operation was begun.
5	H. Tilly.........	*Brit. M. J.*, 1893, ii, 384..........	Adenoids..........	11	M.	Chloroform..	Chloroform given for two minutes.
6	Anonymous......	Yorkshire *Mercury*, 9, 22, 1893..	Adenoids..........	9	F.	Chloroform..	
7	Anonymous......	*Lancet*, 1893, ii, 817.............	Adenoids..........	9	F.	Chloroform..	Death a few minutes after beginning chloroform.
8	Anonymous......	*Brit. M. J.*, 10, 11, 1893	Enlarged tonsils..	10	....	Chloroform..	Chloroform given twice.
9	Anonymous......		Enlarged tonsils..	12	....	Chloroform..	
10	T. J. Wood..... (Gowring's case.)		Adenoids; Lowenberg's forceps.	7	F.	Chloroform..	Under the influence of chloroform 1½ minutes. Tracheotomy and inflation of the lungs by catheter—no pulse perceptible.
11	Anonymous......	*Brit. M. J.*. 3, 29, 1894..........	Adenoids..........	7	F.	Chloroform..	Autopsy: *Trachea and bronchi filled wtth blood.*
12	Halloway........	Private information..........	Tonsils and adenoids.	Under 10 yrs.	....	Chloroform..	
13	Halloway........	*Brit. M. J.*, April, 1895.........	Enlarged tonsils..	4	M.	Chloroform..	Chloroform, fl. ℥ii, given on a towel. Patient in upright position.
14	Edmund Owen..	*Archiv. of Pediatrics*, 8, 1895....	Removal of postnasal growths.	7	F.	Chloroform..	
15	Anonymous......	*Lancet*, 1, 4, 1896...............	Hypertrophied tonsils.	20	F.	*Chloroform..*	*Death early in the operation.*
16	Anonymous......	*Brit. M. J.*, 7, 10, 1897..........	Adenoids..........	16	M.	Chloroform..	Autopsy: nothing to account for collapse.
17	W. J. McCardie.	*Clin. Jour.*, London, 1898, xii, 69-73.	Tonsils and adenoids.	5	F.	A. C. E. mixture and chloroform.	Began with A. C. E. mixture, partial return to consciousness, so was given chloroform before removal of adenoids. Death by "stoppage of the heart."
18	Dr. Dunn of Chicago.	Refer. to by Hinkel in *Laryngoscope*, St. Louis, 1898, v, 50.	Adenoids..........	Child.		Chloroform..	Personal communication by Dr. W. E. Casselberry of Dr. Dunn's case.
19	F. W. Hinkel....	*Laryngoscope*, St. Louis, 1898, v, 50.	Adenoids..........	8	M.	Chloroform..	Respiration and pulse ceased simul taneously.
20	J. A. Stucky.....	*Amer. Pract. and News*, Louisville. 1899, xxvii, 171-173.	Tonsils and adenoids.	15	M.	Chloroform..	Death nine hours after operation; no hemorrhage. Growths removed by tonsillotome and curette.
21	Anonymous......	*Med. Press and Circ.*, London, 1899, N. S., lxvii, 48.	Adenoids..........	14	M	Chloroform..	Under influence of anesthetic 8 or 9 minutes; ℥iss used in 25 minutes. Most concentrated vapor was 0.18 per cent.
22	F. A. Simmons..	*New York Med. Jour.*, 8, 27, 1894.	Tonsils and adenoids.	10	M.	Chloroform..	Circumcision was done first and then tonsils and adenoids were removed. At last sweep of the curette the heart ceased; cyanosis, death. Autopsy: Large thymus, no blood in bronchi, heart stopped in systole.
23	Anonymous......	*Hospital*, London, 1906-7, xli, 176-178.	Tonsils and adenoids.	5	....	Ethyl chlorid.	
24	T. D. Luke......	*Lancet*. 1906, 1233-1236..........	Adenoids..........	14	M.	Ethyl chlorid.	Under anesthetic for ½ min. Just as he returned to consciousness he turned pale and both pulse and
25	L. W. Littig, case No. 11, on table. Reported by F. S. S.	*Iowa M. J.*, Des Moines, 1907-8, xiv, 457-466.	Tonsillotomy.....	8	M.	Chloroform..	s dead.
26	W. H. Roberts..	Tr. of Amer. Laryn., Rhin. and Oto. Soc., 1908, p. 512.	Removal of tonsils.	13	M.	Chloroform..	After completion of operation pulse became irregular, breathing shallow, face suddenly blanced. Ar tificial *respiration: gasped two or* three times; expired. No autopsy.
27	W. H. Roberts..	Ibid............................	Adenoids..........	3 (child).	....	Chloroform..	Breathing suddenly stopped and it was found that heart had ceased beating. No autopsy.
28	W. H. Roberts..	Ibid............................	Adenoids..........	....	....	Chloroform..	No particulars given on request for them.
29	W. H. Roberts..	Ibid............................	Tonsils and adenoids.	12	F.	Chloroform..	Apparently normal events during operation and administration of anesthetic. When operation was completed marked pallor was noticed and cessation of breathing; not noticed whether heart had ceased beating or not. No autopsy.

that I never considered it right to employ it. It undergoes decomposition very easily and rapidly, and when decomposed is a very dangerous poison.

Ethyl chlorid I have used many times, especially in conjunction with ether, at the Pennsylvania Hospital. Although it is a rapidly acting anesthetic and gives rise to practically no unpleasant after-effects, its use is attended by at least one great drawback. If administered for any length of time it induces great rigidity of the jaws, which seriously interferes with the introduction of the gag. It also seems to me that it does not lessen the sensitiveness of the mucous membrane as do ether and chloroform. The patient is apt to cough and gag even when apparently unconscious.

I have appended to this article a list of the deaths attributable to the use of general anesthetics in the removal of tonsils and adenoids. By it will be seen that out of 29 fatal cases 26 deaths were attributable to chloroform, 2 to ethyl chlorid and 1 to a combination of chloroform and A. C. E. mixture. The oldest patient was a woman of 20, the youngest a child of 3. Of the cases in which sex was stated, there were 12 males and 9 females.

I desire to express my indebtedness to Dr. E. J. Stein, of Philadelphia, for much valuable assistance in the compilation of the bibliography accompanying this article. Although Dr. Stein made a careful search of French and German literature, he was unable to find any deaths recorded as the result of the use of a general anesthetic in operations on tonsils or adenoids.

POSTOPERATIVE TONSILLAR BLEEDING

ITS SURGICAL CONTROL, WITH MENTION OF CASES *

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BALTIMORE

The operation on the faucial tonsils at this time may be said to be in a transitional stage from that of incomplete to complete removal. The importance of this subject prompted me to make known some of my ideas and experiences connected with the operation. My first intention was to discuss the entire subject in a general way, and the ideas of a number of the leaders in this Section were asked for in a circular letter addressed to them. I desire here to express my appreciation of their hearty and prompt replies. Our Executive Committee, realizing the magnitude and great importance of the tonsil operation, very wisely decided that a symposium would best serve the purpose of bringing forth a comprehensive and general discussion. I have, therefore, the honor of saying a few words about postoperative tonsillar bleeding.

Hemorrhage from the removal of the faucial tonsils varies greatly, the primary bleeding when all goes favorably amounting to less than an ounce. In some cases, however, the bleeding reaches alarming proportions. The term "alarming proportions" is difficult to define, since a loss of blood which some operators would look on with indifference might cause others great concern. Again a loss of from four to six ounces of blood in some cases might be considered alarming if the patient were frail or young, whereas in a strong, robust individual a loss of this amount of blood could work no material harm other than prolonging convalescence.

Generally speaking, female patients beyond puberty bear loss of blood better than males because of their propensity for more rapid blood-making. When confronted with a freely spurting vessel it is impossible to determine how great may be the loss of blood should it not quickly and effectually be controlled. I can recall my feeling of dismay when first brought face to face with a real bleeding of this kind, but that first case of extreme bleeding proved to be a blessing in disguise, for it forced me to adopt measures whereby I may now feel reasonably secure from any very serious effects of tonsillar bleeding.

I am told by such men as Welty, Stucky, Richards, Robertson, Todd[1] and others that the loss of blood following a complete removal of the tonsil in its capsule is less than after the old method of tonsillotomy with the guillotine. On the other hand, Jackson, Thomas, Vaughan and others,[1] while advocating such complete removal, claim that the loss of blood is greater therefrom.

A fact worthy of note is that, of the 54 cases of alarming bleeding tabulated by Smith[2] and Wright,[3] the tonsillotome in some one of its many forms was employed in 34; and it was also used to remove the tonsils in at least 3 of the 6 fatal cases found by them in the literature from 1868 to 1904, the method of removal in the other 3 fatal cases not having been mentioned. In the 4 more recent fatal cases, reports of which I have been able to collect, the tonsillotome only was employed.

My experience has been that there is a greater tendency to bleed in tonsillectomy than in tonsillotomy, because, in the former, vessels are cut before they subdivide into the terminal filaments and nearer to the source of the large arteries from which they are given off. But I have adopted the complete removal because of the better results thereby obtained, and in performing this operation I have learned how bleeding can be controlled, so that I now feel that the loss of blood from my complete operation is generally much less than it formerly was in performing tonsillotomy.

Two of my cases which I wish to report will illustrate clearly the difference between the old and nonsurgical method of controlling hemorrhage and the more recent and effectual one.

CASE 1.—*Operation.*—A. K., a healthy woman, aged 23, was operated on by me in my office on Jan. 28, 1908, at 4 p. m., under local anesthesia. Both tonsils, which were perhaps the largest I have ever seen, were removed *en masse* with the knife and vulsellum. Bleeding from both sides at the time of the operation was quite profuse, the bleeding on the left side being effectually stilled by pressure with cotton soaked in Monsell's solution. On the right side I was obliged to use Boetcher's hemostat.

Postoperative Hemorrhages.—The patient was removed from my office to the Hebrew Hospital in the evening with the clamp still in position. The hemostat was removed at 10 p. m., the cotton pledget being left in position for nearly three days. No bleeding on removal of cotton. The following, or fourth day, patient left hospital. Nine days after the operation, at midnight, there was a slight bleeding from the right side, this being easily controlled by the use of ice internally and externally. There was no further loss of blood until the following afternoon at 3:30, when it was again necessary to make use of the pressure hemostat. The patient was then sent back to the hospital, and on attempting to remove the clamp at 11 p. m., hemorrhage recurred, making it necessary to replace it. The following morning, February 8, at 2 a. m., a slight bleeding was again noticed, but it was controlled easily by pressure and the use of ice. At 4 o'clock the same day there was again a slight loss of blood, at which time a heavy silk suture was passed deeply through the upper portion of the tonsillar pillars, over the point from which the bleeding seemed to come. For the following twenty-four hours there was no bleeding, and the patient's condition was very satisfactory. Late the next afternoon, February 9, twelve days after the operation, very active hemorrhage commenced, in spite of the suture. Mere pressure had no effect, so the hemostat was again placed in position, bleeding being controlled after a few minutes. At 7 p. m., the clamp slipped, and before it could be replaced a pus basinful of blood was lost.

Control of Hemorrhage.—The patient now being quite weak, we realized that some very radical measures must be adopted at once to avert a fatal issue. She was therefore placed on the operating table at 7:30 p. m., firm pressure being made over the common carotid artery to prevent further bleeding. A roll of iodoform gauze about the size of the tonsil removed, saturated with 1 to 1,000 adrenalin chlorid solution was placed in the tonsillar fossa, and firmly held with a large Kelly clamp by an assistant. A continuous suture was then placed in the pillars of the fauces from the soft palate down to the base of the tongue, a curved Hagedorn needle, placed at a right angle in a plain needle-holder, being used for this purpose. No anesthetic was used for this operation, on account of the weak state of the patient. The time consumed in the work was about half an hour. The pulse was small —about 160 to the minute, and the general condition of the patient was very bad. Two salt infusions of about a pint each were given, one at once and another during the night. There was not a drop of blood lost from this time on. The suture was removed four days later and the gauze pledget allowed to remain one day longer. The tonsillar fossa on removal of the gauze looked very clean, and the patient steadily improved, leaving the hospital in excellent condition on February 21, fifteen days after her last admission.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Personal communications [illegible]

[2] Smith, Harmon: Alarming Hemorrhage Following Tonsillotomy . . . . . Laryngoscope, 1904, p. [illegible].

[3] Wright, Jonathan: Hemorrhage After Amygdalotomy . . . . New York Med. Jour., 1890, lii, 234.

The lessons learned from this case have been most valuable: First, I believe the secondary bleeding was directly caused by the sloughing process following the primary use of Monsell's solution in the tonsillar fossa. I would never again sanction the use of this agent in controlling hemorrhage from the tonsillar region. Second, by permitting repeated recurrences of the bleeding over so long a period of time the patient's life was almost lost. In a similar case I would adopt radical measures at once. Third, had the primary bleeding in this case been managed in the same surgical manner that we employ to-day, we should have been spared all our trouble and anxiety and the patient the danger and discomfort to which she was subjected.

A very interesting case, and one which was managed in a manner somewhat like my own but which ended fatally, has been reported by Damianos and Hermann[4] of Vienna. There are many points in this case worthy of note, and I therefore take the liberty of giving it in detail:

CASE 2.—The patient, a strong, robust man, aged 23, was operated on in one of the dispensaries, with Fahnstock's tonsillotome, on the afternoon of Oct. 9, 1901. An hour and a half later he was brought into the Vienna surgical clinic bleeding profusely from what appeared to be an artery of large caliber. Digital pressure, within and without, over a period of an hour and a quarter, controlled the hemorrhage for about an hour. When it recurred a Mikulicz-Störk compression clamp was applied until the following morning. No further bleeding occurred for three days. On October 13 it was again necessary to apply the clamp to stop bleeding. Removal of the clamp twenty-four hours later, the 14th, was followed by more bleeding, necessitating its further immediate use. No further hemorrhage occurred until the 16th—two days later—when it was once again necessary to make use of the compression clamp. Its removal twenty-four hours later was not followed by bleeding, but there were signs of sloughing at the points where the pressure had been too continuously made by the clamp. A fistula leading from the throat within, through the skin, permitting fluids to escape on swallowing, made its appearance on the 18th, a day later. On the night of the 22d, following an intense paroxysm of coughing, a profuse hemorrhage occurred. the patient losing almost a liter of blood within a few minutes. This was controlled by prolonged digital pressure, but the patient sustained another, though smaller, loss of blood during the night. The following morning, the 23d, the common carotid artery was ligated, but the patient died at 4:30 o'clock in the afternoon, sixteen days after the operation, not having been able to withstand the great loss of blood. Autopsy showed that a small artery arching off from the external maxillary, and running directly into the base of the tonsil, had been severed. A sound could be passed through this vessel from the external maxillary artery to the point in the tonsillar base where it had been cut.

It is clear in my mind that had this bleeding vessel been caught with the artery forceps and ligated with catgut or silk before the loss of blood was so great, the patient's life could have been saved.

To illustrate how such serious bleedings can be averted when the proper measures are used to control primary bleeding, I shall now report a more recent case occurring in one of my patients at the Hebrew Hospital:

CASE 3.—*Operation.*—M. H., a man aged 36, height 5 feet, waist measure 45 inches and weight 185 pounds (all conditions promising for much bleeding), was operated on by me under local anesthesia, Dec. 31, 1908, at 4 p. m. *There was no difficulty in the removal of both tonsils en masse in their* capsules, with the knife and vulsellum, without injury to the pillars of the fauces or exposure of muscle tissue. There was practically no primary bleeding, and the patient was required to keep in an upright position for several hours.

Postoperative Hemorrhage.—There was but the occasional expectoration of blood-stained saliva until about 9 o'clock in the evening, when the patient began to bleed profusely. He was then taken to the operating room and placed on the table. Bleeding from both tonsillar fossæ was found, more profusely from the right, however. A large spurting artery situated deep in the fossa of the right side, near the base of the anterior pillar, was pumping a steady stream across the opposite side of the throat. The bleeding was so profuse that pressure with several sponges seemed to have but little effect.

Control of Hemorrhage.—This vessel was then caught with the Jackson hemostat as quickly as possible and tied with catgut. There was another bleeding vessel of considerable size situated in the supratonsillar fossa of the same side, and this was also clamped and ligated. The patient lost perhaps in all about eight ounces of blood. Though this controlled the major part of the bleeding, there was still a tendency to ooze. The cause for this was soon found and one more artery of small size, situated deeply about the middle of the right posterior pillar, was caught and tied, also two small veins on the left side, one high up in the supratonsillar fossa, and the other in the bottom of the fossa just above the tongue. There was no further loss of blood, and the patient made an uninterrupted recovery, leaving the hospital on the third day after the operation.

From the profuse bleeding in this case we may say with certainty that had the same measures been employed to control it here as in Case 1 the outcome would have been as serious as in the former case, if not more so.

Many reasons have been offered as to why bleeding is great in some cases and slight in others. There can be no doubt that hemorrhage is more likely to occur in older subjects, but I have been forced to ligate vessels in a number of very young children. Severe hemorrhage has also been said to occur oftener in men than women. In my own experience, however, I can find no basis for this belief.

Hemophilia has been thought in many instances to be the cause of alarming hemorrhage. While no one will dispute the seriousness of an attempt to remove the tonsils in cases in which a real hemorrhagic diathesis exists, there are but few authentic cases of postoperative tonsillar hemorrhage where real proof of hemophilia can be produced. In the 150 cases collected from the literature by Damianos and Hermann,[4] only five, from the history, were thought to be hemophiles. In but two of the eight fatalities, reports of which were collected by the same authors, could this form of dyscrasia be suspected.

Among the fifty-four cases tabulated by Smith[2] and Wright,[3] three patients, all of whom recovered, were said by the operators to be hemophiles. I doubt whether even three patients would have recovered had they been real hemophiles. An undoubted hemophile was the patient whose case was reported by Dr. R. H. Johnston[5]—a boy, aged 17, who died fourteen days after three tonsillar crypts had been cauterized with the galvanocautery, from an almost continuous bleeding starting on the ninth day.

Dr. Chevalier Jackson[6] reports a case in which he saved the life of a patient after tonsil operation, performed by another physician, by ligation of the external carotid artery. Subsequent developments showed undoubted hemorrhagic diathesis, the patient bleeding to death from epistaxis at a later period.

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[4] Damianos and Hermann: Tödliche Nachblutung nach Tonsillotomie . . . , Wien. klin. Wchnschr., 1902, p. 225.

[5] Rev. hebd. de laryngol., 1906, xxvii, 545.

[6] Jackson, Chevalier: Ligation of External Carotid Artery . . . , New York Med. Jour., 1907, p. 308.

I believe that in many of the so-called hemophiles the bleeding is due to a blood vessel having been opened by cutting and not securely tied. In the Vienna case a family history of bleeding had been elicited from the patient, and, had the autopsy not proved the vessel to have been cut, this could undoubtedly have been reported as a case of hemophilia.

Cutting of either pillar of the fauces has been mentioned as a frequent cause of hemorrhage; many believe this to be the most common cause. This is probably true in those cases in which operation is done with the guillotine. In the new methods by dissection, hemorrhage is always greater when muscular fibers are exposed.

In order to have a clear understanding of the method which I employ, it will be better to follow the plan of the operation as we perform it at the Hebrew Hospital. As to the method itself nothing original is claimed. We simply apply the principle used to control bleeding in all general surgical operations—namely, to catch and tie every vessel showing a tendency to bleed profusely.

The operation performed is essentially that described by Dr. T. Chew Worthington,[7] with some slight modification in the technic. The tonsil is removed by dissection *en masse* in its capsule, with a modified Seiler septum knife, a two-pronged vulsellum being used to pull the gland out of its bed. Patients above 14, and occasionally under that age, are operated on when sitting under local anesthesia. A 0.25 per cent. solution of cocain in 1 to 6,000 adrenalin chlorid solution is injected into the region after the application of a 10 per cent. solution of cocain to the surface. Very little discomfort is complained of by the patient when thus anesthetized. Operations on children, and at times adults who insist on it, are done under ether anesthesia, the patient lying on the back, with the head of the table considerably lowered, so that the blood can not easily enter the larynx; 1 to 6,000 adrenalin solution is also injected before operating. The right tonsil is first removed, the tongue being depressed by an assistant. One or more large gauze sponges held in eight-inch Kelly static forceps and ligated with ordinary No. 2 catgut or clamps are then placed in the fossa and held there gently but firmly. The anesthetist is now directed to anesthetize the patient again fully. This being accomplished, a careful inspection of the fossa is made by holding back the anterior pillar with a pillar hook. Any spurting vessel is caught at once with Jackson's hemoblack silk. While we prefer catgut in most cases because we never hear from it again, it is sometimes easier to use silk. On several occasions, however, in which silk was used in the supratonsillar fossa it became encysted and gave rise to such irritation that we were obliged to pick it out. This does not occur when it is used lower down because it sloughs off during the process of healing.

At times, in spite of much blood pouring down the center of the fossa from above, there is no spurting vessel visible until the supratonsillar fossa is everted by means of a couple of pairs of long dressing forceps. In turning out the fossa we must not be misguided by the cessation of hemorrhage, for often the pressure made during this process is sufficient to close the mouth of the vessel. By lessening somewhat the pressure of the dressing forceps we have often been enabled to find the mouth of the spurting artery. It is from an artery high up in this situation, generally a branch of the descending palatine, that we have most trouble, and there is no doubt in my mind that this artery was responsible for the serious bleeding in Case 1. Ligation of the tonsillar artery has also been found necessary a number of times. Ballenger[8] has found bleeding from this vessel to be more frequent than from any other, whereas Jackson[9] sees the bleeding oftener from the upper vessel, as we likewise maintain. Occasionally it is also necessary to tie a vein or two of the tonsillar plexus.

All bleeding vessels having been controlled, a gauze sponge dusted with Squibb's surgical powder is packed into the fossa to control any oozing, and thus we have our field of operation absolutely free from blood for the removal of the left tonsil.

The second tonsil is removed in the same manner, and after all bleeding is controlled we remove the adenoid vegetations if their removal is called for. Here, too, we control the bleeding with a gauze sponge held firmly in the postnasal space by means of a Kelly clamp. Often no more than one-half to an ounce of blood is lost from the triple operation, and but a small proportion of this comes from the tonsils. Generally speaking, there is more primary bleeding when ether is given than when only local anesthesia is employed.

Many assert that the ligation of bleeding vessels is impossible in the small space afforded us in this region. I do not wish to imply that it is always easy to ligate vessels deep in the fossa; on the contrary, in a small mouth, when the vessel happens to be one the posterior pillar or deep down near the base of the tongue, where the bite of the forceps must necessarily be short, we frequently have to resort to a gauze packer to slip our loop over the end of the clamp. But in most instances we tie the vessels with comparative ease.

It may be argued that the ligature is not always necessary; that torsion will often suffice. Granted that this is true in a number of cases, I believe that by the use of the ligature we not only reduce primary hemorrhage to a minimum, but that we are also secured absolutely from recurrent or secondary bleeding; I have experienced such occurrences only when the vessel was not tied. In one case I was obliged to use ether anesthesia in an adult, several hours after the tonsils had been removed under cocain, in order to catch and tie the spurting artery. This could doubtless have been accomplished with little difficulty during the operation before the effects of the cocain had worn off.

An absolute necessity in catching and ligating the vessels is to have able assistants, as one assistant should evert the pillars while the other sponges and depresses the tongue, leaving both hands of the operator free to catch and tie vessels. This is one of my main reasons for no longer removing tonsils outside of the hospital.

An important point, in my opinion, is that the patient should not be removed from the operating table to his bed until all signs of bleeding have disappeared and the throat is perfectly dry. By so doing we avoid the swallowing of blood by the patient in a semiconscious state, as so frequently happens after the return to bed. Casselberry[10] reports the death of a boy, 3 years of age, after the removal of one tonsil, where the primary bleeding was apparently insignificant and was thought to have ceased; yet a few hours later the child was found in a hopeless condition, the blood having been swallowed. (This patient was not operated on by Dr. Casselberry, but by some other physician whose name was not mentioned.)

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[7] A Simple Method of Excision of the Faucial Tonsils, The Journal A. M. A., May 25, 1907, xlviii, 1761.

[8] Clinical Anatomy of the Tonsil, Tr. Am. Laryng. Assn., 1906, xxviii, 121.

[9] Tonsillar Hemorrhage and Its Surgical Treatment, Ann. Surg., December, 1907, xlvi, 821.

It is quite generally recognized that in the presence of hemorrhagic diathesis the clotting capacity of the blood is increased by the calcium salts. In the removal of the posterior turbinal ends, in a number of cases, I have operated on the one side with, and the other side without, the preliminary administration of calcium, and in nearly every case there seemed to be much less bleeding when these salts were given.

Just how great may be the effect of these preparations on tonsillar bleeding it is, of course, difficult to say with certainty, but as it is impossible to tell in what cases hemophilia may exist, it has been my custom for a couple of years past to administer calcium, usually in the form of the lactate, for forty-eight hours prior to every tonsillectomy. One thing is certain: it can do no harm.

Regarding the injection of adrenalin preparation, there is a diversity of opinion. Some operators believe that its use predisposes to secondary bleeding. I recall no instance when the bleeding could be ascribed to the use of this agent, and it seems to me that the advantage offered during the operation, of a less bloody field with our landmarks unobscured, more than compensates for any slight tendency to secondary bleeding thought to follow its use.

This method of controlling bleeding has been used by me for the past ten months in both private and dispensary patients, with the utmost satisfaction. During this time styptics have been given up entirely and the pressure hemostat, formerly often applied, to the great discomfort of the patient, has fallen entirely into disuse.

In conclusion I would say that many obstacles arising at times in the management of some of my cases have been easily overcome through the efficient aid of Dr. Charles Bagley, Jr., and his assistants at the Hebrew Hospital.

1622 Madison Avenue.

ABSTRACT OF DISCUSSION

ON TONSIL SYMPOSIUM (PAPERS BY DRS. ROBERTSON, MAYER, PIERCE, PACKARD, AND COHEN)

Dr. Frank C. Todd, Minneapolis: It is evident that the profession is appreciating the fact that the incomplete operation performed with the tonsillotome has now no place in modern surgery. The removal of the entire tonsil in its capsule leaving intact its bed of muscular tissue and the faucial pillars uninjured gives the best ultimate results. But if the muscle tissue is torn or otherwise materially injured or the pillars are greatly damaged, or portions of the tonsil remain to form adhesive bands between the pillars and to continue the disease process, then the results are not the best that can be secured and may even bring about such cicatricial contraction as to interfere with the normal action of the muscles thereby causing discomfort and disturbance. Yet it is evident that considerable traumatism to these structures may take place and the results be good, even though not ideal. As throat surgeons, however, it is our duty to try to bring about ideal results and so to perfect our technic as to accomplish this end.

While the methods now in vogue differ materially, I can not help but observe that we are coming closer together and experience is bringing us to a method which will be, I believe, more or less universally adopted. A considerable experience has taught me the wisdom of avoiding the use of sharp instruments and particularly scissors and the method which I am using is similar to that described by Dr. Pierce. Dr. Cohen calls attention to the fact that it is not only desirable to stop bleeding on account of the danger to life, but for the sake of losing as little blood as possible, even though that danger does not exist. Dr Cohen quotes some as having claimed that the complete removal of the tonsil in its capsule results in less hemorrhage than following tonsillotomy with the guillotine, while he states that some others claim that the loss of blood is greater. This is undoubtedly due to the difference in the technic of various operators and I believe those who have performed the operation a great deal have worked out a more bloodless method. It will be interesting to secure the testimony of operators some years later when we have determined what may be considered the best method of performing this operation.

In regard to the use of calcium salts to prevent bleeding, I herewith quote an article recently published in The Journal of the American Medical Association, entitled "Pharmacologic Fetishisms" by Wilfred N. Barton, M.D., Washington, D. C. "The salts of calcium are supposed by many physicians—perhaps a majority—to increase the coagulability of the blood. As a matter of fact, they have no influence on coagulation time (Robertson, Illman, Duncan). Nor is it quite clear from a pharmacologic standpoint why they should ever have been expected to do so. Almost all of the calcium taken internally is passed through the bowel unchanged, owing to its extreme insolubility and impermeability. Then, too, it should be remembered that there is almost never any deficiency of calcium in the adult tissues. Treating with calcium internal hemorrhages in which the coagulability of blood is not reduced seems the height of folly. The calcium ion is useless in therapeutics."

Recently it has been called to my attention that the formation of a fibrous clot could be stimulated effectively by applying gelatine and I am now using it for that purpose in the nose as well as the throat. It seems to be effective but I do not feel that my experience is as yet of sufficient value to present the results at this time. One point which I wish especially to emphasize, however, is that of the position of the patient during general anesthesia. To do this operation properly and quickly a good view of the field of operation is required. The positions usually utilized, with which you are familiar, do not afford so good a view as the one which I here advocate, nor have they several advantages which will become evident to you on using this position. This I have learned not alone from my own experience, but from those who have witnessed the operation done in this position. The advantage of the position is not only the good view obtained, which can also be enjoyed by other observers, but there is absolutely no danger of the blood entering the larynx and the blood does not as easily obscure the field of operation. All assistants are out of the way and the first assistant can effectively sponge the blood and hold the tongue depressor.

Dr. Chevalier Jackson, Pittsburg: I think we shall all file away this morning's symposium and the discussion which has followed and study it over carefully. I question very much if there will ever be any one way of doing tonsil operations that will be followed by every one, but if we can break down that Chinese wall we have all put around ourselves with regard to the tonsil operation we can learn much. I thought I knew how to do the operation but two years ago I went to Fall River and saw Dr. Richards doing the work and I went home a wiser man. I found that I had not been getting the tonsils out completely. I was surprised when I found how easily one could determine by feeling in the fossa whether he had cleaned it out. When my former patients return now I take out the rest of the tonsils. One patient came back and I looked in the throat and said, "Why, this is one of the most

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10. Chicago Med. Recorder, 1893, iv, 1.

beautiful results from the tonsil operations I have ever had." She said "Yes, after Dr. Dickinson fixed it up; he operated two months ago." I began to find out then how Dickinson did it and found that he had a good many good points in technic. We can all learn if we are willing. Every one who has seen Dr. Pierce operate knows the skilful manner in which he handles instruments. The snare he has shown is one of the best I have seen. I can heartily endorse Dr. Cohen's paper. There is no reason why we should use ice for the arrest of tonsillar hemorrhage when we know that we can control it in a surgical manner. I think ligation is at times necessary, though for the smaller vessels torsion is sufficient. It is difficult of course; every thing worth doing is difficult.

In regard to Dr. Pierce's remark as to the uniqueness of my experience in ligation of the carotid, I have been also called to task by St. Clair Thompson in the same way. My position was unique for the reason that as consultant I saw these cases after everything else had been tried and the patient was moribund. I ligated the external carotid in a case in which previously caustics had been used and when the slough began to separate there was oozing again and had the carotid not been tied the patient would have bled to death. Changes in the blood in typhoid fever, diphtheria, erysipelas and other diseases may bring about a temporary condition similar to hemophilia.

As to instruments, we all have our own, of course, and we work with them until to us they are the best.

Dr. F. Gurney Stubbs, Chicago: I think the conclusions we will all draw from this symposium on the tonsils is that laryngology is advancing. One of the chief criticisms that has been levelled at the laryngologist is that he is somewhat provincial: that he is inclined to shut himself up in his own field ignoring the general principles of medicine and surgery. This has led the laryngologist into many errors and it is a sad commentary that at this late day, before a section on laryngology we should have to have called to our attention such a simple surgical procedure as picking up an artery with the clamp if it is bleeding. Probably the reason the tonsil operation has been brought into such bad repute is that every Tom, Dick and Harry in the medical profession has felt that the tonsillotome is all that is necessary for this operation. The papers which have been read to-day thoroughly cover the ground. It remains for each of us to work out his own technic.

We can not get away from the paper on anatomy; that is fixed. Of course, we may have an anomaly in which an artery is not where we expect it to be, but that is extremely rare. In considering the anatomy we must bear in mind that the source of disease, which is one of the indications for operation, is in the crypts and those of us who have for a number of years been shelling out the tonsil in its capsule, with the side toward the muscular tissue smooth and shiny, have been able to put a blunt probe down in the crypts and find that the bottom of these crypts is nothing more or less than this thin capsule. That is why when a tonsillotome is used and half the gland cut off the crypts go on with the disease just the same as before the operation. All that has been accomplished is to make more room in the throat. That important factor was not lost sight of in the indictions for enucleating tonsils.

As to the pathology of the tonsil, and its function, the hypothesis of Dr. Robertson appeals to me as most rational, especially as to the function of the tonsil being past at the sixth or eighth year, and if not previously inflamed tends to atrophy, the same as the adenoid.

As Dr. Jackson has just said, each one of us will probably work out a technic which varies a little from the other man's and it all depends on how familiar we become with that technic and how dextrous. Personally in the last five years I have been removing the tonsil *en masse* in its capsule. We have a body to enucleate which is held in position by no ligments; it simply rests between the faucial pillars held there by a reflexion of the mucous menbrane of the throat over it. Consequently by taking a knife, it doesn't matter what kind, we can easily cut through the mucous membrane and with forceps draw the tonsil well toward the median line in the throat and as soon as we have done that we see that it is attached only by loose connective tissue. Then with blunt dissection you go around it until you get over the line of greatest circumference. From then on it is a question of how to proceed. Some keep on using the knife claiming that when you are so far there is no use discarding the knife for another instrument. Personally I use a snare at this stage and with one contraction of the hand it shells the gland out very quickly. But, of course, that is a matter of preference. The whole operation of removing a tonsil should not take more than two or three minutes.

The question of bleeding then confronts us. In the last five or six years I have never encountered a spurting artery which necessitated a ligature. I think, however, that we should confront the matter as a surgeon would in other conditions. When the tonsil is enucleated in the manner I have described it is easy for you to see the blood vessels of any size that are cut and they are in loose connective tissue which allows them to contract readily. For a second after the removal of the tonsil there may be a rush of blood but as a rule the snare (and that is why I prefer it) crushes the ends of these vessels. As soon as the tonsil is out I take a piece of gauze in artery forceps and hold it in the fossa for a minute and then remove it. If there should be a spurting vessel, catch it up and treat it surgically.

Dr. W. E. Casselberry, Chicago: To secure data bearing on the superiority of results in tonsillectomy, the degree of safety of ether anesthesia for this operation in children and the readiest means of controlling hemorrhage, I have collected my records of 610 cases of patients operated on in private practice which for comparison of results may be divided as follows: (1) Tonsillotomy by the older methods embracing about 40 per cent. with ultimate recurrence of symptoms in one out of five cases; (2) tonsillectomy, not quite complete, in 20 per cent. with few actual recurrences but with many minor complaints from retention of secretions in the few follicles which escaped removal; (3) modern total tonsillectomy, in 40 per cent., with practical freedom from recurrence, in all cases.

Total tonsillectomy is an ordeal through which few adults are able to sit quietly for both tonsils at one time, and as the after-soreness is considerable, an interval of a week between the two is my customary recommendation excepting, of course, when a general anesthetic is given which is always necessary in young children and sometimes in adults to insure the quietude which this operation demands. When done in two sittings, it is reckoned statistically as one operation; 245 cases, nearly all of double tonsillectomy and adenectomy, most of the patients children under 14 years of age have been satisfactorily operated on under complete ether anesthesia without any fatality or other accident excepting threatened respiratory syncope twice which yielded promptly to artificial respiration, and without any subsequent pneumonia or nephritis or any permanent detriment. Midway during the preliminary etherization the throat is sprayed sparingly with a 2 per cent. cocain solution with adrenalin 1 to 2,000, an expedient which accounts for a more satisfactory quietude of the throat with avoidance of delays than is commonly credited to ether. Safety is likewise promoted by a special position of the patient which, while guarding against aspiration of blood, expedites the operating by diminishing the delays caused by bleeding. The right abdominal position which I now use throughout for the heavier patients and in part for all patients, differs from the usual lateral position in that the patient lies, not strictly on the side, but on the abdomen and antero-lateral surface of the chest and shoulder, the right arm being drawn from below backward across the table, which prevents him from rolling off. The face is first directed upward for convenience in removing the right tonsil but at the first free flow of blood the face is rotated downward, which I call the bleeding position, in which as bleeding lessens without waiting for it to stop, one can proceed unembarrassed by the blood flow, to enucleate the left tonsil, provided the operator kneels to direct a good headlight from below upward into the throat. However for smaller children who can be turned quickly and neatly I still prefer the dorsal position with head and shoulders raised, for the first tonsil, turning at the critical moment to the bleeding position for the second tonsil and returning again to the dorsal position for the adenoid.

Hemorrhages requiring supplementary means of control, in children, have been less than one per cent., whereas in adults all methods represented, none proving exempt, they have been 8 per cent., or if stated in terms of single adult tonsils 10 to 25, the ratio figuring the same since the use of adrenalin as before it, and the same for tonsillectomy as for tonsillotomy; but the cleanness of the socket after total enucleation renders it easier to find a bleeding vessel. These hemorrhages were all arterial and continued from 1 to 10 hours, showing no tendency to stop till controlled by the following means: In 8 cases by galvanocauterization; in 1 case by actual cauterization; in 1 case by solid silver nitrate cauterization; in 3 cases by hemostatic forceps; in 3 cases by Mikulicz' compressor; in 1 case by digital compression.

Dr. C. F. Welty, San Francisco: All tonsillar hemorrhage comes from remaining tonsil tissue. To describe just how this comes about, and why it is so I will have to describe the technic of the way I operate. I have stopped doing cocain operations entirely. The patient is sent to the hospital the night before, the bowels emptied and no breakfast allowed in the morning. A half hour before operation a ¼ grain morphin with a 1/150 atropin is given hypodermically; children in proportion, governed by the weight of the patient, and no morphin given to children under four years of age. The patient is placed on the back; primary anesthesia of nitrous oxid is given until they are completely under, and then ether until the patient ceases to struggle or the irritation is overcome; then the mouth gag is applied and the head drawn toward the right, the operator sitting on a chair. I have been using Dr. Rupert's cannula in the mouth. At this stage the throat is apt to be filled by mucus which is cleared away and a 1 to 1,000 solution of adrenalin is injected into the mucous membrane around the tonsil, about ½ dram. Then with any kind of a knife the mucous membrane is severed just where it attaches to the tonsil; and this is a very important step. My assistant holds the tongue and that is all; I take care of the hemorrhage myself. I use one anatomic forceps and one nasal forceps with an acute angle. I can change my hold of the tonsil with this very easily without causing hemorrhage. This incision through the mucous membrane is all the cutting that is done. Then I introduce the anatomic forceps and sweep it around and generally find that with a single sweep the tonsil is out in the throat. Sometimes it takes longer and sometimes the adhesions must be cut. Then the snare is put on and the operation finished. There may be a rush of blood, when a sponge is put in and held there for a minute or so, being changed as soon as it is saturated with blood, and being held with considerable pressure. If the bleeding does not stop in a short time I look for the bleeding vessel and grasp it with the forceps, allowing them to remain on for a few seconds and then taking them off. If it continues to bleed I suture the pillars at once. I never allow a patient to leave the table while bleeding. I have 250 such cases to report, with one severe bleeding, and in that case the tonsil was not sufficiently removed.

Dr. George L. Richards, Fall River, Mass.: There are two types of these tonsils—the large ones which stand out in the throat, and the smaller submerged ones in which the capsule has considerable fibrous tissue running down into the tonsil. In order to get any tonsil out completely you must do the operation extracapsularly. Dr. Jackson has kindly referred to me in connection with the finger nail operation; I did not originate it. There is a point where the line of cleavage between the capsule and fossa allows the finger nail to go through. It has one advantage over the blunt instrument and that is that you have the sense of touch, and you can get up into the supratonsillar fossa and get the velar lobe and bring it down into the throat. As soon as the tonsil is out in the throat I apply the forceps and then detach with the tonsillotome or snare. You can operate with any type of instrument with which you are familiar, but the main thing is to do the operation extracapsularly.

The question of tonsillotomy or tonsillectomy is not yet settled. One-third of the operators are still doing tonsillotomy, thinking the complete unnecessary. They have not studied the literature of rheumatism and kindred infections which have their portal of entry in the tonsils or they would change their minds. I agree with Dr. Welty as to hemorrhage occurring because of incomplete operation, though this is by no means always the case. Robertson showed us at the New Orleans session how to get the entire tonsil out and showed then that hemorrhage was sometimes due to incomplete operation. But the majority of cases reported in the literature do not seem to have been due to that cause. The six cases reported by Heuking came from injury to the pillars. It may be that this is sometimes the case, and it is as apt to be due to the tonsillotomy as to the tonsillectomy operation. It is easy to cut one of the pillars longitudinally and that is the worst bleeding to stop. One advantage of the finger method is that bleeding from this point is less apt to occur.

Dr. J. F. Barnhill, Indianapolis: I wish to subscribe to most that has been said concerning thorough work in tonsil dissection, but I do not believe the time has yet arrived when we should say that all tonsils should be removed by tonsillectomy. It has been said over and over again that we do not know what the function of the tonsil is, and until we do know that it has no function we should not in every case remove it *in toto*. In the kind of tonsil that Dr. Mayer has spoken of as the projecting tonsil it is not always necessary to remove it by dissection. I wish to defend local anesthesia for tonsil dissection. In the great majority of cases it is not necessary to subject the adult patient to general anesthesia for the purpose of total enucleation of the tonsils. With our modern means, and with modern remedies at hand, we may with local anesthesia now state to the patient that we can dissect out his tonsils without the least pain. The tonsils may immediately be dissected loose and removed together with their capsules. I do not have any one hold the tongue except the patient himself. There is a good psychic influence in this aside from the benefit you have of having every one out of the way. They may say they can not hold his tongue down, but you tell them that all others have done so and they will succeed nearly always better than any assistant could.

In regard to hemorrhage, of course everyone should be prepared to meet the emergency. I do not believe that it is always necessary to tie these vessels. Many of the vessels that spurt only slightly will check quickly and we do not hear from them again; nevertheless, I agree with Dr. Cohen that we should be surgeons and therefore prepared to do the work surgically when it is necessary.

Dr. Mark D. Stevenson, Akron, Ohio: The surgery of the tonsillar fossa, outside of the removal of mechanical obstruction, is primarily for the removal of retention spaces. There is little benefit obtained, either locally or to the general economy, if spaces remain after tonsillectomy due to pouch formation from scar contraction, or too free granulation or folds in the pillars, the harm depending on the amount of retention. To prevent pouch formation it is usually best to sacrifice the plica triangularis and sometimes a part of a very large overhanging anterior pillar. I also use a high table but I sit on a low stool. The patient lies on his side with his upper shoulder resting against a sidepiece which is placed on the table, and which comes to within a short distance of the head of the table. The patient's head is lower than the neck, and his face points downward and toward the operator so that blood or vomited matter readily runs out of the mouth. I think that in Dr. Todd's position a port of the already too small breathing space would be filled with blood. After complete enucleation of the tonsil, I find it very difficult and sometimes impossible to seize bleeding vessels with an ordinary hemostatic forceps, so I have had a forceps made pivoted with small sharp teeth on the end which readily seize the vessels in the moving pharyngeal muscles. It is slightly larger a short distance from the end than at the end, making it easier to slip the ligature down to the tissues in ligating a vessel. I do not find it difficult to ligate vessels during the operation but very difficult afterward when the patient is nervous and weak. One-half hour before operating a small dose of bromids is given to quiet patients when a local anesthetic is to be used. After removing a tonsil under general anesthesia steady pressure of gauze in the fossa usually quickly stops all bleeding. I prefer to use a knife alone or a knife and snare under general anesthesia, but under local anesthesia when it is important not to pull the tonsil which causes pain, especially that complained of in the Eustachian region, I much prefer the scissors and use three different shapes, one curved on the flat, another on the edge, and a third especially bent to cut free the base of the tonsil which usually lies considerably below the level of the tongue, and is difficult to cut with ordinary scissors. Under a general anesthetic the finger is one of the most useful instruments but I never employ it under local anesthesia. In dissecting the pillars free, the finger also makes a useful tongue depressor, and in addition, backward pressure can sometimes be made against the tonsil so that the knife does not draw it far from its fossa which causes after pain toward the ear.

Dr. Percy Fridenberg, New York City: As to tonsillar hemorrhage, ligation of the bleeding vessel is a counsel of perfection. Undoubtedly the surgical procedure described is the best, but in some cases we can not apply that procedure as we would desire; for instance, if we are called to see a case in which bleeding has been going on for some time it is almost impossible to find the vessels and catch them up and ligate them. In a case of severe tonsillar hemorrhage, as in epistaxis, the extreme restlessness and fear, the anxiety of the patient, often attended with shock and collapse or attacks of syncope, may make it impossible to get near the bleeding point until the action of the heart has been depressed, preferably by narcotic. This alone, by quieting the patient will sometimes stop the bleeding, and may be the only way of preparing for the surgical procedure which has been advised. When you are called in haste to such a case, and see blood everywhere: the patient spitting and coughing blood, the surrounding attendants "sweating blood," it is no easy matter to ligate a torn tonsillar vessel. In these instances we have to have recourse to measures which are not all we would wish, and among these measures I would mention a good strong hypodermic of morphin and digital compression.

Dr. F. E. V. Shore, Des Moines, Iowa: If we are to be so perfect in our surgical technic, and do these operations as surgeons would, it is surprising to me that one would discard the knife in a portion of the operation and use the snare to complete the work. I should as soon expect the general surgeon to use the snare in removing the appendix or for amputating a limb. It is certainly non-surgical and when the operation can be finished just as well without danger without changing the instrument, I can not see why we should not use the knife. Personally I have always used a sharp knife with a round point as sharp as it is possible to get it. It doesn't necessarily follow that I use the sharp edge at every step of the operation. As soon as I have divided the membrane, I dissect it up from the tonsil, separating the loose tissue until the tonsil is free. I do not believe it is a surgical procedure to run the finger down the throat. It is certainly not as aseptic as to use the knife which can be done just as well. I always precede the operation with the use of adrenalin.

There is one other point and that is as to the anesthetic. I must confess that I am not in harmony with the majority of the members as to the preferable anesthetic. I have operated in about the same number of cases that Dr. Casselberry mentioned, have used chloroform and in but two cases have I had difficulty. In one of these instead of using adrenalin I used adrin which I understand is twice as strong as adrenalin. In the other case, I used 10 per cent. solution of cocain applied to the throat. Both patients were children and there was temporary collapse. In a large number of cases, the status lymphaticus spoken of is really a status anestheticus. The anesthetist is at fault. Chloroform is safe if the anesthetist is familiar with his work. I never have hemorrhage any more. The patient must be prepared as for general operation, work done by preference in early morning before the patient has partaken of food or liquids. When the chloroform is administered, the patient should be in recumbent position with same after-care. I had some very severe hemorrhages in my early operations but have had none since adopting the routine method of ligation of the spurting vessels and in adults stitching the pillars. I remove the stitches in twenty-four hours.

Dr. O. Tydings, Chicago: Beginning this work some years ago, I first used the guillotine, then the blunt pointed curved bistoury, and later the cautery, for the entire removal of the tonsil. In 1902 I began the use of the knife and snare. I would separate the pillars and free the tonsil from adhesion with sharp knife occasionally using a blunt dissector until I could engage the tonsil in the loop of the snare. I spoke of this method five years ago and was reminded that the blunt dissector had been used 1,000 years before. I still have occasional use of my blunt dissector. I think Dr. Welty has struck the keynote as to the cause of hemorrhage, as our experience at the Chicago Eye, Ear, Nose and Throat Hospital shows. Dr. Stubbs, who spoke kindly of my knife, and I do two-thirds of the throat work at that institution; he reports no hemorrhages. I have had six cases of hemorrhage reported to me in the past seven years, three of which I saw. I did nothing in either case as the hemorrhage had been arrested before my arrival. There are many means by which we can control hemorrhage; one is by producing an artificial hyperemia, by constricting the limbs, by lowering blood pressure with an injection of morphin or anything to divert the current of blood from the parts. That all are not so easily arrested is evidenced by the following: A few weeks ago I was called up by a gentleman to know what to do for a case of hemorrhage. I told him what I would do but he did not heed the advice as he had succeeded without it. When a man leaves part of the tonsil and goes back after it with a punch to remove it, he is not doing clean surgical work. The cases of hemorrhages that I have been called on to treat have been other physicians' patients in whom there had been a partial removal of the tonsil. I may run across one of these severe bleeders some day, but I haven't yet; but I certainly should not feel alarmed, if I did, if I had an ordinary pair of forceps in my hand.

Dr. Oscar Wilkinson, Washington, exhibited a curved needle by which, after packing the fossæ with gauze, one could stitch the two pillars together. By putting in two or three stitches over the packed cavity one will not have any trouble in controlling the hemorrhage.

Dr. W. W. Carter, New York City: The snare is the method I usually employ in removing the tonsils. I was surprised to hear from Dr. Wright a few days ago that probably in nine-tenths of the tonsils removed by the snare there were found to be, on the outside of the tonsil so removed, striated muscular fibers. I believe this is due to two things: first, failure to follow the line of cleavage between the tonsil and fossa in separating the tonsil prior to applying the snare; second, to pulling the muscular tissue into the snare loop before bringing it home. I have seen within the last six months three cases in which the proper action of the posterior pillars has been interfered with by the removal of a portion of the muscular tissue by the snare. There was regurgitation of liquids through the nose. I wish to warn, therefore, against the use of the snare when the tonsil has not been properly liberated from the surrounding tissue, and from too great traction being made on the tonsil before bringing the snare home.

As to the use of the hemostat, I believe that it has its use, but that it is one of emergency, and should be limited to the time it takes to get hold of proper forceps, needles and sutures for stopping the hemorrhage in a strictly surgical manner. The amount of traumatism following the use of the tonsillar hemostat has been observed by me on several occasions. I saw a case recently in which the cellulitis following was sufficient, I am afraid, to cause the death of the patient. The proper method for stopping hemorrhage is to ligate the bleeding vessel, and this principle should be adhered to as strictly in throat surgery as in other parts of the body.

Dr. Joseph White, Richmond, Va.: I have operated for the removal of tonsils considerably more than one thousand times and never had a fatality and have only seen twice what I considered a very dangerous hemorrhage. In one case, I had to ligate the external carotid artery; in the other digital compression for six hours stopped the bleeding. I have not met with any other annoying or dangerous hemorrhage, and if you want a perfectly dry field you have nothing to do but make digital compression on the carotid against the spinal column. Most of the cases of bad bleeding are in adults and not in children, and compression on the carotid in this way will give you a dry field. When you release the pressure you can see the bleeding point and grasp it with a hemostat and the best one I have used for this purpose is Jackson's. Most cases of bleeding have been associated with nephritis, and the urine should be examined before operation in every case.

Dr. D. J. McDonald, New York City: I wish to speak of the question of backward children. As one looks at the matter of the discussion here to-day and notes the advances being made in this new field we must come to the conclusion that whatever method we employ we should be perfect in our operation. We know that thousands of dollars are lost to the city of New York, where there are eight hundred thousand children, because of these conditions. So that it is a matter of great importance to the community at large it behooves us to stir ourselves in order to better these conditions and save the community from excessive taxation. I have followed out the line of work of Dr. Richards, which can be done without a great surgical armamentarium. There are, of course, dangers connected with every operation. We could show that at least 40 per cent. of the troubles of childhood are due to these conditions. Let us do the work thoroughly, no matter by what method, and save the state, the nation and the child.

Dr. N. L. Wilson, Elizabeth, N. J.: I believe that any tonsil which needs to be removed should be thoroughly removed by a tonsillectomy. I have had more pain, more infection and more bleeding from tonsillectomy, but I believe that if the work is to be done at all it should be done in this thorough manner. I do not believe in giving morphin as it abolishes the reflexes which are so important. As to adrenalin, the majority of physicians I find use it too strong. It should not be used in a strength of more than 1 to 7,000 or 1 to 10,000. Just as good a hemostatic effect is obtained with the weaker solution. The question of light has been to me a very serious one. At the present time I am having one constructed for me on the plan of the Todd transilluminator. Ether is my choice as a general anesthetic, cocain and adrenalin for local anesthesia. The nurse is always instructed to watch the patient, and if she observes frequent swallowing to notify the doctor to examine the throat for bleeding.

Dr. Otto Glogau, New York City: In the April number of *American Medicine* I called attention to the importance of nasal examination in these cases. This is often neglected. It is necessary, especially for this work of education, to tell the school inspectors to pay more attention to the nasal condition of these children, as the correction of some primary nasal defect will avoid unnecessary removal of lymphoid tissue. Tonsillectomy may be indicated in some cases in which the patient or the parents are tuberculous or rheumatic. We do not yet know perfectly the function of the tonsils. Formerly the surgeons removed the whole thyroid but they do not now. When it is known that after the age of 12 or 14 years the tissue shrinks up why should we remove it thoroughly if the only symptoms are the interference with breathing? In most cases a well-performed tonsillotomy will give enough relief. The chiefs themselves in the dispensaries do not do this work and it may be dangerous if the young men should perform tonsillectomies. Besides a tonsillotomy, if done *lege artis*, takes a very long time and can only be performed under general anesthesia. Therefore at least in dispensary work tonsillotomy will be the only available method.

Dr. C. M. Robertson, Chicago: A great deal of hemorrhage is from the palatine and tonsillar arteries which are given off from the external maxillary, sometimes very close to the external carotid. There is likely to be a hemorrhage necessitating ligature, because the vessel is cut so short that the blood clot is forced out of the vessel by the pressure of the blood current.

Dr. Emil Mayer, New York City: In regard to my own portion of the subject I tried to emphasize the fact that not every tonsil that comes to us is grist for our mill. A child who does not present symptoms of obstructed breathing and has not had any previously existing tonsillar disease should be left alone until such time as the tonsils have had a chance to atrophy or until they become enlarged sufficiently to justify an operation. I was pleased to have Dr. Pierce make a suggestion which I shall surely follow—that of seizing the uvula with forceps and holding it out of the way to prevent its being engaged in the snare.

That anesthesia should never be given in a physician's office is absolute and positive; death after death has been reported from following this procedure. Chloroform is dangerous. These operations are done for the promotion of the welfare of these children and are not operations of necessity or emergency and, therefore, it is the more tragic if anything happens and we should be very cautious. In the adult both tonsils should not be removed at the same time.

In regard to the use of instruments: We have had instruments for the separation of the pillar; sharp instruments have been shown, and blunt ones, and we have seen some of the fingers: now I have something to show you which is in between these. I have taken the curved tonsil separator and had the edges serrated; with this the tonsil is readily enucleated. As to why we discard the knife at the final stage, that is a perfectly simple thing. We discard it in the lower portion because we have almost enucleated the tonsil and we come to the point of greatest danger and the snare enables us to complete the operation without danger. While we do not have hemorrhage we have a bloody surface and I would like Dr. Cohen to tell us how he ties these vessels. I think it is not so simple as has been expressed. As to the statement that the chiefs of clinic allow the younger assistants to do tonsillectomies, if the gentleman will visit my own clinic he will find that this is not so. My competent assistants do that kind of work and to each man is assigned a patient to be operated on and there is a check on him in the punching of the card to show who has done the operation. The junior is not allowed to do it until he has had long experience and has shown by his ability to do other things his dexterity in doing the more difficult operations; it is the last thing he is given to do.

Dr. Norval H. Pierce, Chicago: Dr. Mayer has expressed my ideas so much better than I could, that there is not much left for me to say. Regarding tonsillectomy versus tonsillotomy, Chicago I believe has been the battle ground. We have had some very warm discussions there and I was, and still am, a disbeliever in the removal of the tonsils as at one time advocated by some of my colleagues, For instance, in the early days of the work a gentleman showed me some specimens of tonsils encased in the lateral wall of the pharynx and of which he was very proud but which showed that he did not do a tonsillectomy, but a pharyngotomy; he took out pharyngeal tissue with the tonsil and not a little of it, either. I was called to see a patient after such a pharyngotomy. The patient was suffering with profound sepsis from which he recovered after a long illness and to this day he has a torticollis. It is very important to keep within a safe distance of the muscular tissue surrounding the tonsils and I think the snare does that better than any other instrument or method, not excepting dissection by the classical finger, described most beautifully by no less a gentleman than our esteemed colleague Celsus, who lived, as you know, some time before the present advocates of that method.

Dr. Lee Cohen, Baltimore: I should like to correct a seemingly prevalent, false impression that I have had an unusual number of severe bleedings. In ten years, I have had about eight cases, which I considered more or less troublesome. Perhaps some other operator would not have looked on these as very severe. Only in the two cases reported have I had any great difficulty in controlling the hemorrhage. The ligature is used not only to guard against serious bleeding but to reduce the loss of blood to the minimum, so that in frail children, convalescence may be hastened. As to the difficulty in seeing the vessels in case of profuse hemorrhage. This can always be satisfactorily overcome by packing the fossa with from two to four gauze sponges held in Kelly clamps, the pressure from which stops the bleeding for the time being. By removing one sponge at a time, beginning from below, we are enabled to inspect the fossa in sections, and thus the bleeding point can be seen with ease.

The method of tying is as follows: The hemostat being held by an assistant, a loose single loop of No. 2 catgut is tied around the shank of the forceps and slipped down to the lower end by means of the left index finger, while the other end of the catgut is held in the right hand, no part of which need enter the patients mouth. By bending the forceps over, or as expressed by Dr. Finney of Baltimore, by "rocking" it, the loop is pushed over the end of the hemostat, where it is held by the index finger, while the right hand draws the knot tightly. The clamp is now removed and the tying completed. With catgut, three loops should be used. Though incomplete removal may be the cause of severe hemorrhage, I can not agree with Dr. Welty, that it is the sole cause. In both severe hemorrhages reported by me, the tonsils were removed completely, with capsule intact, leaving a clean, smooth fossa. As to the removal of each tonsil separately, as suggested by Dr. Mayer, this may be advisable when a great deal of blood is lost from one side. When bleeding from the one is completely controlled by the ligature, however, before the other is excised, I can see no need of twice incapacitating the patient. I always remove both at one sitting.

There are two minor causes, which have appealed to me: One is foul breath when nothing but decomposing tonsillar secretion can be found to account for it. Another is pain referred to the ear, but in reality due to secretion pent up in the supratonsillar fossa. Tonsillectomy promptly relieves both conditions.

TRIFACIAL NEURALGIA *

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One has only to glance over the literature covering the subject of trifacial neuralgia to realize the state of mind in which the medical profession has been in regard to the pathology and treatment of that most painful affection. It is well known that the more uncertainty there is as to the etiology and pathology of a disease the more varied is the treatment and the less uniform are the results. Rarely do we see anything approaching specific treatment of a disease unless the inciting cause and the resulting reaction are known.

The suffering occasioned by trifacial neuralgia has been such as to have excited for years the interest of physicians in the endeavor to find some means of permanent relief. The treatment of the disease has varied according as the ideas of the cause and pathology have varied, and it does not seem probable that the treatment will ever be uniform until a definite knowledge of such pathology is established. It is not the purpose of this paper to present any new information on the subject as the result of original research, but rather to endeavor, if possible, to arrive at some definite conclusions on the nature of trifacial neuralgia from an examination of the already existing literature on the subject.

For a long time it has been known that certain constitutional states of the body can produce a neuralgia of the trigeminal nerve. This is occasionally seen in such diseases as diabetes mellitus, malaria, syphilis, exhaustion, chronic nephritis, rheumatism, gout, lead poisoning, *et cetera*. As long ago as 1891 Dana[1] called attention to the fact that patients suffering from trifacial neuralgia very frequently have associated with that condition one of general arteriosclerosis. This led him to believe that arteriosclerosis was the chief cause of neuralgia. This view has been supported at times by others, notably by Putnam,[2] who published in 1891 ten cases in which he found an endarteritis and a general fibrosis; and by Horsley,[3] who had already advanced the same idea in 1887. Later, in 1897, the same surgeon, in discussing the pathology of trigeminal neuralgia, stated that he had not found any more degenerative changes than could be accounted for by the age, condition and habits of the patients.

Cushing[4] admits that arteriosclerosis is a persistent condition, but asserts that it follows the neuralgia and is a result of the pain. In support of this view, he cites a case in which, before operation, the blood pressure averaged 190 mm., rising to 200 mm. during the paroxysms. Since operation the average pressure has been 140 mm. The condition of heightened blood pressure is brought about, he thinks, by constantly recurring afferent impulses, which, like hard work, lead to changes in the vessels. Undoubtedly the condition of arteriosclerosis can produce trifacial neuralgia, and in these cases the use of the vasodilators to the proper degree will relieve the pain. It is easily conceivable, also, that the constantly recurring paroxysms of pain can aggravate an already existing arteriosclerosis, so that after operation an improvement will be seen in the blood pressure.

Tumors of the base of the brain, of the skull and of the Gasserian ganglion itself, may cause a neuralgia of the fifth nerve, as can also irritative conditions about the nose and mouth. Porcher,[5] in 1903, reported six cases in which the neuralgia was due to localized inflammation in the nose, antrum of Highmore or teeth. In two of the six cases, the Gasserian ganglion had already been removed by well-known surgeons, with a recurrence of the pain. Both patients were cured by proper drainage of the antrum of Highmore.

In 1905, Snow[6] reported 20 cases in which the neuralgia was due to intranasal pressure or a collection of pus within some of the accessory sinuses. He said he had seen "many cases of the acute form of tic douloureux accompany a cold with sinus accumulation and pass away with abatement of the inflammation or proper drainage of the nose." Somers,[7] in a paper in 1906, mentions the nose as a frequent and often unrecognized cause, and states that hypertrophy of the turbines, especially the middle, not infrequently produces both supraorbital and infraorbital neuralgia. He also calls attention to inflammation of the frontal, ethmoidal, sphenoidal sinuses and of the antrum of Highmore, as causes of trifacial neuralgia.

In the mouth, impacted third molars, carious teeth, pulp nodules found in the pulp chamber, and decayed roots entering the antrum of Highmore and producing antrum disease, frequently bring about a neuralgia of the fifth nerve. It is also well known that mere exposure to cold or damp weather is sufficient to start up attacks in some patients.

The type of lesion induced by the foregoing causes, which are irritative in character, is probably either a degenerative one or a peripheral neuritis which may be ascending in character, and may secondarily involve the Gasserian ganglion. But the number of cases of tic douloureux coming under this division is small and there remains by far the greater majority in which no constitutional or local irritative cause can be found. This gives some grounds for thinking there may be two types of neuralgia; one in which the lesion consists primarily of a neuritis of the peripheral branches which may be ascending in character, and another in which the primary lesion appears in the Gasserian ganglion.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Dana: Med. News, New York, 1891, lviii.

[2] Putnam: Boston Med. and Surg. Jour., August, 1891.

[3] Horsley: Tr. Odont. Society, Lond. 1887.

[4] Cushing: Johns Hopkins Hosp. Bull., 1907, xviii.

[5] Porcher: Tr. Am. Laryngol. Assn., 1903.

[6] Snow: Tic Douloureux and Other Neuralgias from Intranasal and Accessory Sinus Pressures, New York Med. Jour., 1905, lxxxi.

[7] Somers, Lewis S.: Nasal Disease and Neuralgia, THE JOURNAL A. M. A., 1906, xlvii, 741.

The first group might be said to include the minor neuralgias in which the pain is not so intense, or the attacks so paroxysmal. The second group includes the major neuralgias in which the lesion is primarily central. These neuralgias are characterized by their paroxysms which tend to recur more frequently and to become progressively worse and by the associated facial tic.

Is there a definite pathology to be found in these cases of major neuralgia?

Rose[8] found a thickening of the interstitial connective tissues of the ganglion, and an irregularity in the form of the ganglionic cells. On this basis he regards the disease as a chronic inflammation resulting in contraction and compression of the nerve cells. Horsley,[9] in 1897, said he had not found more degenerative changes in ganglia than could be accounted for by the age, condition and habits of the patients. Krause,[10] in 1896, found degeneration of the ganglionic cells and nerve fibers, but no sclerosis or endarteritis.

In 1898 Spiller[11] gives the following as a result of the examination of seven ganglia removed by Keen:

> The medullary substance of the nerve fibers within the ganglion and its branches is much swollen, atrophied or entirely gone, depending on the intensity of the disease. The axis cylinders similarly are markedly degenerated or entirely destroyed. The vessels are very distinctly sclerotic, in some the lumen being entirely obliterated. There is also an increase in the connective tissue of the ganglion.

Two years later Barker,[12] in reporting the condition of two ganglia after removal, said that there were scarcely any normal-appearing cells; some of the nuclei were swollen and concentric bodies were present.

Schwab,[13] in 1903, reported the microscopic findings in four ganglia, two of which were removed before any peripheral operation had been done. The condition found in these four ganglia was the same as was found in two others reported the year preceding. He said:

> In all the ganglia a certain number of distinctly abnormal cells have been found. The number is too large to be accounted for by the accidental effect of faulty technic or through any hardening or staining processes. The cell changes have been found mostly in the peripheral portions of the ganglia, and in those cells which are characterized by staining deeply, by elongated outline and by their small volume, as compared to the cells which lie in the deeper portions of the ganglia. The changes found in the cells vary all the way from a slight degree of chromolysis to profound changes of total cell disintegration and nuclear migration. In three of the six ganglia perinuclear pigmentation was present in large numbers of the cells. In one of the ganglia a sclerosis of the periganglionic tissue with excessive connective tissue formation around and between the cells was found, which was so pronounced that its pathologic significance is unquestioned. In some of the ganglia neuritic changes were found in the peripheral branches, but only in those cases in which a peripheral operation had previously been done.

Later on Schwab, from twenty cases, concludes that there is a neuritis ascending *from the* terminal branches; that there is an interstitial inflammation of the ganglion, and that there is a central neuralgia affecting the roots at their entrance into the *pons*.

In 1904 Spiller[14] stated that, of 159 ganglia examined, all presented evidences of degeneration. Davis[15] also reported, in 1904, a ganglion examined by him, which showed advanced degeneration. Gordon,[16] two years later, in eight ganglia, "found the blood cells more or less thickened, depending on the age of the patient. The nerve bundles situated in the vicinity of the altered blood vessels always showed distinct degeneration. The duration of the disease has no special bearing on the degree of involvement of the nerves." He concludes as follows:

> The occurrence of degeneration of peripheral nerves is frequent, if not constant in neuralgia. This nerve degeneration is probably a primary one which, as a neuritis, assumes an ascending condition, and secondarily involves the Gasserian ganglia; the blood vessels undoubtedly play a certain rôle in the causation of a degenerative state of the peripheral nerves. It is difficult to draw a sharp distinction between neuritis and neuralgia, as accumulated facts tend to show an anatomic basis for the latter affection.

Cases are on record in which the ganglion removed by operation has showed nothing abnormal on microscopic examination. Caminiti[17] points out that at times cellular changes are present in the ganglion when tic douloureaux has not even existed.

Dana has suggested, I believe, that the pain occurring in women in early years may be in the nature of migraine; but that after a number of years the pain becomes chronic and more definitely located in the divisions. In the beginning, he says, it may be a disorder of the sensory neuron, neither in the *ganglion or in the* peripheral branches, but later certain degenerative changes may develop in the branches. The pain occurring after 40 years of age is due to a definite lesion either in the ganglion or in the branches.

The type of lesion in trifacial neuralgia when present has been either a degenerative one, an inflammatory one, as interstitial neuritis, or a neoplasm. As I understand, Spiller, who perhaps has made as careful a study of the subject as any one living, and whose experience has been extensive, has not yet examined a ganglion which has not showed evidences of abnormality. And yet, in a personal communication to me, he said that he was not ready to state that there was a definite pathologic condition to be found in every case of trigeminal neuralgia. Possibly the consensus of opinion may be summed up in his words:

> I should be unwilling to say that pathologic changes will be found in every case because we must believe that in some instances sufficient time has not been given for severe alteration to develop before the ganglion was removed.

And still, if the lesion is in the ganglion, why will division of the second and third branches of the fifth nerve, as they come off the ganglion within the skull, cure, for the time being at least, the neuralgia occurring in those divisions? In certain cases of recurrence in which Abbe operated a second time, it has been found that the pain has returned with *regeneration* of the nerve trunks. It was this fact which led him, in 1903, to adopt the method of interposing rubber tissue between the cut ends of the nerves to prevent reunion. If the lesion is in the ganglion, why should division of the peripheral branches give relief? Have not the better end-results obtained in complete removal of the Gasserian ganglion been due to the impossibility of regeneration of the nerve fibers? Spiller[14] says:

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[8] Rose: Practitioner, London, 1899, lxii.

[9] Horsley: Clin. Jour., 1897.

[10] Krause: Berl. klin. Wchnschr., 1906, xli; Die Neuralgie des Trigeminus, Leipsic, 1896.

[11] Keen and Spiller: Am. Jour. Med. Sc., 1898, cxvi.

[12] Barker, Lewellys F.: Microscopic Examination of Several Gasserian Ganglia, THE JOURNAL A. M. A., 1900, xxxiv, 1093.

[13] Schwab: Jour. Nerv. and Mental Dis., 1903, xxx.

[14] Frazier, Charles H., and Spiller, William G.: Physiologic Extirpation of the Ganglion of Gasser, THE JOURNAL A. M. A., 1904, xliii, 943.

[15] Davis: Univ. Penn. Med. Bull., 1904, xvii.

[16] Gordon: Is Neuralgia a Functional Disease? Tr. Coll. Phys. Philadelphia, 1906, xxviii.

[17] Caminiti: Arch. f. klin. chir., lxxvii, 4.

> Very few ganglia have been entirely removed without relief of pain; indeed, I know of only two cases, and I am skeptical concerning these.

It seems also that we have a great deal to learn about the chemical changes in nerve cells during discharges of nerve impulses. "It seems possible that long after primary irritation has ceased, an abnormal chemical state may remain and excite the pain."[18]

We may divide the treatment of trifacial neuralgia into medical and surgical. In determining which to advise, it is necessary, if possible, to find the cause of the disease. Also the duration and frequency and severity of the attacks must be considered. It has been estimated that nearly 20 per cent. of the cases of trifacial neuralgia are amenable to treatment other than surgical. In view of this fact, it seems advisable first to recommend medical treatment to be given only for a short length of time unless improvement in the symptoms is seen. It is needless to say that in those cases recurring after some peripheral operation, medical treatment is contraindicated.

In the treatment of neuralgia of the fifth nerve by medical means, we should first remove, as far as possible, all predisposing causes, such as anemia, malaria, lead-poisoning, syphilis, etc., giving each condition its appropriate treatment. Occasionally, this alone will be sufficient to correct the neuralgia. If the patient is arteriosclerotic, the vasodilators pushed to the degree of producing a sufficient softening of the pulse may control the pain. In the migrainous type of neuralgia, according to Dana, surgical treatment should never be advised, as the lesion is probably located in the central nervous system. One has only to glance over the long list of drugs recommended for use in trifacial neuralgia to realize the uncertainty attending the use of any one. I shall speak of only one, namely, strychnin, as it seems to be the most reliable. It should be given in large ascending doses once daily subcutaneously. If a favorable response occurs, after the pain has disappeared, the drug should be gradually withdrawn.

In 1903 Zimmern[19] published an article giving the results obtained in eighteen cases treated by galvanism. He applies the constant galvanic current of an intensity of eight to fifteen milliamperes over the affected nerve endings for an hour or more at a time, after having first placed a large flat electrode over the nape of the neck, and a half mask of heavy tin-foil moulded to shape the face. In this way, as the current is distributed, no burning occurs. Of the eighteen cases of severe type treated in this way, Zimmern was successful in every case. The value of this treatment has been subscribed to in this country by Zabriskie and others.

In view of the fact that certain cases have been reported in which the neuralgia has been ascribed to nasal and buccal conditions and has been relieved by the correction of those abnormal conditions, a thorough examination of those cavities should be made. One should not be in a hurry, however, to ascribe the neuralgia to the teeth, for many patients have been martyrs to the cause in the past and have sacrificed all their teeth on one or the other side, without relief to their pain. But, as we do know that a carious tooth, antrum disease, accessory sinus disease or hypertrophied turbinates occasionally produce neuralgia, those conditions, if found to exist, should be corrected in the hope that by so doing we may reach the cause of the trouble.

Experience has shown that by the above means a certain number of cases of neuralgia of the fifth nerve will be arrested, either permanently or for longer or shorter intervals. Medical treatment, however, should be given only a fair trial. If the attacks are very frequent, severe and uncontrollable, one should advise an operation.

The injection treatment of trifacial neuralgia has been practiced with more or less success since Billroth and Neuber first began to use osmic acid in 1884. Many cures were reported as a result of this treatment. In 1900 Schlösser began to use 80 per cent. alcohol instead of the osmic acid. As yet he has not made, I believe, a complete report, but from time to time statements have been made by him and by other surgeons, showing that much is to be expected from the alcohol injections. The object of the treatment is to reach the second and third divisions just at their exits from the foramen rotundum and foramen ovale, respectively. It is not necessary to inject the alcohol directly into the nerve sheaths, but only into the vicinity of the nerve trunks. The operation is not a difficult one to do, and as yet no bad after-effects have been noticed. As a result of the injections, a degenerative reaction is set up in the nerve, the effects of which are only transitory. Anesthesia of one-half of the anterior part of the head from the vertex to the chin is produced, as well as some incomplete paralysis of the masticatory muscles, which usually passes away in a few hours, but which may, according to Ostwalt,[20] last two or three months. The nerve recovers its normal condition, but "the pathologic irritability causing neuralgia disappears for a long time."[21] Ostwalt[20] reported, in 1906, sixty cases of trifacial neuralgia treated by injections of 80 per cent. alcohol; one-third of the patients had recurrences within five months of the time of the first injection. The relapse, as a rule, however, was much less severe and was promptly relieved by other injections. In 1907, Schlösser, at the Medical Congress at Wiesbaden, reported 209 cases in which relief from pain lasted on an average about one year from the time of the injections. Kiliani has reached his hundred-and-eightieth case and states that "his failures are exceedingly few." Patrick[22] published sixteen cases with one failure from supposed inability to reach the nerve. Of the sixteen patients, four have had occasional recurrence of pain, but they refused further treatment.

A permanent cure following a single injection is not, as a rule, to be expected. Recurrences may take place at any time from five months to one year. But Schlösser says that repeated injections delay the recurrences more and more, so that an almost absolute immunity from pain may ultimately be promised these people. It would seem as if the method has been given a thorough enough trial to mark it as a very successful palliative method of treatment.

The history of the operative treatment of trifacial neuralgia has been one of failure, until the intracranial operation was advised and performed in 1890. Since then the results of operation have been steadily growing better. The peripheral operations were a failure in most cases, because of regeneration of the nerve fibers. Still, in those cases in which a peripheral operation is indicated, good results may follow if measures are taken, such as plugging the foranina with silver screws or plugs, to prevent reunion of the ends of the divided and avulsed nerves. Peripheral operations on the third division, for one reason or another, are usually followed by better results than operations on the other two divisions. Frazier[23] says that, if pain is restricted to the distribution of the inferior dental branch of the third division or to the infraorbital branch of the second division, there is no question but that a peripheral operation is the one of choice, because the risk is less from this operation; a certain percentage of patients will recover, and a larger number are given relief, at least for some time One should always, however, resect a considerable portion of the nerve, or remove as much as possible by avulsion and plug the foramen.

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[18] Zabriskie: Postgraduate, 1905, xx.

[19] Zimmern: Arch de neurol., xv, No. 87.

[20] Ostwalt: Lancet, London, 1906, i.

[21] Hecht, D'Orsay: The Methods and Technic of the Deep Alcohol Injections for Trifacial Neuralgia, The Journal A. M. A., 1907, xlix.

[22] Patrick, Hugh T.: The Treatment of Trifacial Neuralgia by Means of Deep Injections of Alcohol, The Journal A. M. A., 1907, xlix, 1567.

When recurrence follows one or more peripheral operations, or when the distribution of the pain becomes more widespread and is no longer limited to one, but is referred to two or all the branches of the ganglion, the period in which the peripheral operation is indicated has passed.

There are many variations in the procedure of surgeons in performing the intracranial operation. Some surgeons, as Abbe,[24] prefer to divide the branches, resect a small portion as they leave the anterior aspect of the ganglion, and then interpose rubber tissue between the cut ends to prevent reunion. Other operators, as Cushing,[4] Krause, Lexner,[25] favor total extirpation of the ganglion; while others, as Frazier and Kocher, prefer division or avulsion of the posterior sensory root of the ganglion. Cushing, I understand, has also lately begun to perform this operation in preference to total extirpation.

The failure of the intracranial operation from recurrence of pain has been due to reunion of the divided anterior branches when the Abbe operation was performed, or to incomplete removal of the ganglion when complete extirpation was attempted. To overcome these possibilities, Spiller, in 1898, suggested that the sensory root be divided. The success of this operation lies in the fact that unmedullated nerves do not become regenerated after division; and, as the nerve fibers comprising the sensory root of the ganglion are not medullated, regeneration after division does not take place. This has been proved experimentally by Spiller and confirmed by Ballance and Stewart[26] and Van Gehuchten.[27]

The difficulties of the intracranial operation do not lie in the exposure of the ganglion, but in the attempt to free it from its bed and in the fact of its close proximity to the wall of the cavernous sinus and the sixth nerve. For these reasons, it is asserted that division of the sensory root is the easiest method to carry out and will result in a still further decrease in the mortality.

For a long time intracranial operations were held in disfavor, because of the attendant high death rate. Tiffany's[28] estimated mortality, in 1896, of 22 to 23 per cent. for many years was the basis of the argument that the intracranial operation should be advised only in case of last resort. At that time the operation was in the developmental stage and as a consequence the risks were greater than they are at present. Hartley and Frazier place the mortality now at about 3 per cent. in competent hands. Cushing has had 2 deaths in 49 cases, while in the last 25 cases he has had no deaths. Abbe, in his last 25 cases, reports no deaths.

At present, when done by experienced men, the intracranial operation for trifacial neuralgia is not attended by more danger than is the average abdominal operation.

SUMMARY

Facial neuralgia may be classed as minor and major neuralgia. Minor neuralgias are due to peripheral causes, as carious teeth, disease of the antrum of Highmore, or nasal sinuses, by hypertrophied turbinates, nasal spurs, etc. The major neuralgias are probably due to a central lesion in the Gasserian ganglion, although, in these cases, the causes at times may have been peripheral.

The pathology of trifacial neuralgia is still indefinite. Although the investigation along that line has been very extensive, there still seems to be no definite lesion which can be demonstrated in every Gasserian ganglion removed. At least, some of the ganglia examined have given negative results, as reported by the pathologist. The lesion when present may be of a degenerative type, interstitial neuritis or a neoplasm (Frazier). Arteriosclerosis of the blood vessels is a common condition seen. In the peripheral nerves, there may be an ascending neuritis, which may secondarily affect the ganglion.

The treatment of trifacial neuralgia may be arranged under three divisions:

1. *Medical Stage.*—Medical treatment, often effective in the minor neuralgias due to constitutional conditions; includes also local treatment of nose and mouth; should not be persisted in too long without results.

2. *Peripheral Operation Stage.*—Peripheral operation, as neurectomy or avulsion, often effective in those cases in which one branch of a division or one division alone is affected. This stage includes treatment by injections of 80 per cent. alcohol in the region of the painful nerve, the results of which treatment have been very satisfactory. Cases for peripheral operation or treatment by injections should be carefully selected, and even in those cases there will be a certain percentage of recurrences.

3. *Stage of Intracranial Operation.*—Intracranial operations indicated in all types of major neuralgia where more than one division is affected and where medical treatment and peripheral operations have been tried and have failed. The operation advocated by Spiller, consisting of division of the sensory root of the Gasserian ganglion, seems to be the most rational one.

Note—In addition to the authorities previously cited, the following may be found of interest:

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[23] Frazier: Am. Jour. Med. Sc., 1903, cxxvi.
[24] Abbe: Ann. Surg., January, 1903.
[25] Lexner and Turk: Arch. f. klin. Chir., 1902, lxv.
[26] Ballance and Stewart: The Healing of Nerves, Macmillan Co.
[27] Van Gehuchten: Univ. Penn. Med. Bull., 1904, xvii.
[28] Tiffany: Ann. Surg., 1896, xxiv.

ABSTRACT OF DISCUSSION

Dr. Eugene S. Talbot, Chicago: I have had very little experience in the general treatment of trifacial neuralgia. Perhaps some of the most obscure cases are those in relation to irritations about the jaws and teeth. The most difficult cases I have been called on to treat are those in which there has been interstitial gingivitis for a number of years, with absorption of the alveolar process and in which the nerve fibers running into the apices of the roots have become exposed. In some cases it is very easy to diagnose these conditions, especially when the teeth are loose; on the other hand, there are obscure cases in which only one side of the alveolar process has been absorbed and the tooth still remains tight. The pulps are alive in these teeth, and it is only after exclusion of other conditions that we are able to locate the pain. In these cases the only thing to do is to destroy the pulps of the teeth. Other cases which are common and difficult to diagnose are those in which secondary dentine has developed in the dental pulp, or pulp stones. While all of us understand the pathology of the dental pulp, to a certain extent, yet from my experience in the study of this organ, I believe no one has a full idea of its pathology. It is a singular thing that within the last few years we have noted that certain conditions of the system such as autointoxication, blood poisoning, no matter whether due to drugs or systemic conditions, affect this organ, and it is one of the first structures to become involved in autointoxication. The pulp is an end-organ situated within the tooth. There are only one or two blood vessels and nerves entering the root of the tooth, where they multiply and divide and become a large mass, as compared with the entering nerves and arteries. This mass is enclosed in a crypt or cell. Toxins circulating in the blood, no matter what they may be, enter. The moment the pulp becomes engorged with blood there is stasis. Indicanuria, acidosis or any form of blood poisoning, causes this organ to become so involved that many of the diseases due to irritations are developed and deposits of secondary dentine, the formation of calcification islands, and the pressure on the nerve fibers in the pulp cause facial neuralgia. These are important pathologic conditions to the stomatologist. The average general practitioner would never locate the cause of the facial neuralgia in these structures. In cases of facial neuralgia, the stomatologist and the general practitioner should consult in order to locate the cause of the pain. The treatment outlined in this paper has become one of the fixed methods. I would like to hear more in regard to it.

Dr. M. L. Rhein, New York: As an observer I have carefully noted for some years what has been done in these cases, and from my own observations I have reached the conclusion that the general surgeon is prone to underestimate the number of cases of major facial neuralgia which develop from peripheral causes, which must originally have been minor neuralgias. This is the portion of the essay which is of especial interest to our Section. It is my belief from observation that the percentage of these cases that are ascending, as he puts it, is very much larger than is generally credited, and there is good reason for the fact that the general surgeon does not appreciate the number of cases that start in this manner. In the first place it is very rarely that he has the opportunity to come across these cases in the initial condition when it is purely of peripheral origin. But every stomatologist of any experience has had so many cases of this kind that have eventually terminated in the major form, that I feel we can all substantiate this point.

The question that is of peculiar interest to us is the prevention of major neuralgias by radically treating them in the condition that they present to the stomatologist when they are of peripheral origin. As I understand, Dr. Talbot was discussing the effect of the pathologic condition of the pulp of the teeth in these cases. It is in this very respect that I have been looking for the real etiologic factor of the peripheral origin of these cases for a number of years. Dr. Vida Latham has been very helpful to me for a number of years in mounting pathologic specimens of pulps of this nature which I have sent to her, and the microscopic examination of these pulps has borne out this fact. The peculiar relationship that the pulp has to the teeth when it is subject to unnatural irritation, is one that is bound to result in more or less of a pathologic condition at various periods of stress due to this irritating action, and it is my conviction that a great many dental operations are primarily at fault for this irritating and painful effect on the pulps of the teeth. In my experience the patients have been benefited to a great degree by absolutely eradicating the neuralgia when the case has been seen early enough before the disease has extended sufficiently into the nerve fiber itself, by the thorough removal of the pathologic pulp. In this respect I believe that when the offending tooth has been distinctly located, there has often been failure to produce the desired results.

It is absolutely essential in these cases that the pulp tissue should be removed to the very end of the root canal. In a majority of these cases crystallization of the pulp tissues has started and progressed to some extent, and this makes the removal of such pulp tissue in the multi-rooted teeth, where it generally exists, a very difficult matter, and instrumentation alone is never successful in satisfactorily accomplishing these results. When an operator discovers that he has located the real origin of this trouble in such a tooth, and is unable to remove every particle of the contents of those canals, there is only one recourse left, and that is to remove the tooth. In my experience the number of such teeth removed is very small, and only occurs when the irregularity of the roots in very great. The *x*-ray is of great help to the stomatologist, not only in giving him aid in diagnosing the offending pulp, but in informing him when he has satisfactorily reached the end of such roots. I could recite a number of cases that have passed into my hands after such pulp removal has been attempted and not successfully completed, in which, on completion by removing the contents from each of these canals, the result has been satisfactory. When the case once departs from this condition and reaches the unfortunate state described by the essayist as the major form, no method yet devised can be absolutely depended on.

I have paid special attention to the statistics regarding injection of alcohol, and I have found that my patient is relieved sometimes for a year, and even for two years; but recurrence of the major neuralgia finally ensues in a large number of cases treated in this way. I believe this to be due to the fact that the injection of the alcohol does nothing more than paralyze the nerve tissue involved at this period, and that when this action has been finally thrown off, as it generally is in time, the old condition recurs so far as major operations are concerned, therefore I am in hearty accord with what I judge is the technic of the essayist. I believe that when it is incumbent to have an operation of this kind, only the most radical offers any permanent results.

Dr. J. E. Power, Providence, R. I.: This error of faulty diagnosis is not confined entirely to the members of the dental profession. It is true that numbers of teeth are extracted for neuralgias which are not of dental origin; but this same error exists in the ranks of the neurologist, the surgeon, and the physician. By the very direction of their interests they are likely to see things from their viewpoint alone. I believe that the surgical procedure for the treatment of neuralgia should be the last thing on the program of treatment, and that while the dentist is bound in the interest of justice to refer his patient to the neurologist, the neurologist and physician have an equal responsibility, and they also are bound to refer such a patient to the dentist. While there are numbers of cases in which all the teeth have been extracted from a patient for relief of neuralgia with negative results, major operations are performed when proper examination and treatment of the teeth would reveal the cause and perhaps cure the disease. I believe that there is a very small percentage of those cases, which have become chronic, that can be traced directly to a dental origin, but the number is sufficient for us to give proper consideration to dental pains as a probable etiologic factor in neuralgia. Possibly Dr. Hussey will tell us whether or not there is any danger of tumor formation at the ends of the nerves when rubber has been interposed, and the relative danger of its presence. Since he has a wide experience in the medicinal treatment of neuralgia I shall be glad to have him relate his experience with aconitin.

The following is a brief history of a case which came under my treatment about four years ago. A patient, about 35 years old, suffered with neuralgia during varying periods, for five or six years. During these periods relief could be secured only by the administration of drugs. Examination showed a normal oral cavity. The lower third molar had been with difficulty extracted some three or four years previous. I performed an exploratory operation in the region of the extracted tooth which consisted of cutting through the tissues, chiseling through the bone, and establishing a communication with the inferior dental canal. Everything seemed normal, so I dressed the case, and in due time discharged the patient. Three years have now elapsed and there has been no recurrence of pain since two days after the operation. I do not know just what happened to cure the pain. We all know that in a process of repair of bone a callus is formed. I believe that in the extraction of the third molar referred to, the dentist had injured the bone. During the process of repair which followed a callus probably formed on the inner surface of that canal, which was just large enough to produce pressure on the inferior dental nerve. This of course is theoretical reasoning, but that the patient is cured is indeed fact.

Another case which will show the relative importance of dentistry to all other branches of medicine is the following, which had been diagnosticated trifacial neuralgia by several physicians, including a noted neurologist. The patient was prepared for an operation which would remove the second branch of the fifth nerve. The incision was made just below the orbit. When the bone was broken through pus flowed steadily from the antrum. The antrum drained and the patient was discharged cured. Is it not reasonable to believe that if the patient had been referred to a dentist or to a nose and throat specialist, the modern dentist or specialist would have examined the antrum by transillumination or other methods and even in the absence of any subjective symptoms would have made a positive diagnosis, thereby increasing the happiness of the patient.

Dr. M. L. Rhein, New York: My experience with the application of cold and heat and electricity in these cases is not very satisfactory; in the majority of cases they do not give the exact diagnostic results we desire. I have had success in reaching the tooth involved by a careful radiograph of each individual tooth in turn so as to not get one large radiograph of one side of the jaw but simply a non-distorted shadow picture of each particular tooth and its surroundings. It is generally at the point where the pulp with its circulation enters the root canal that the evidence of this inflammatory action becomes evident, and a careful study of most of these radiographs will show the effect of the inflammatory action on the alveolar structure in this neighborhood.

I do not mean to confine the dental irritation entirely to pulp effects. There are all kinds of dental disturbances that will act as peripheral etiologic factors in these cases, but nothing is so prone to do so as the condition in the case described by Dr. Powers. The number of cases due to the roots of the teeth impinging on the inferior dental canal itself has come to the obervation of almost every one of us, and this is also true of the effect of leaving portions of the roots of the teeth in the jaw after such teeth have been extracted. It has been my misfortune in a way to find myself at loggerheads with a number of men in my own locality, who are specialists in the extraction of teeth, for the simple reason that it has been the dogmatic practice of the majority of these specialists in extraction, that when they fracture the roots of the teeth (and there is no blame to be attached to them for that), and find that there is no purulent condition surrounding the roots of the teeth they calmly advise the patient that they need give no further consideration to this portion of the tooth left in the alveolus, and I have found it impossible at times to get such a specialist to remove such pieces. There is no factor more prone to produce peripheral irritation than a piece of root left, especiallly in the neighborhood of the inferior maxillary sinus.

Dr. U. C. Wendell, Milwaukee, Wis.: Not as a neurologist or pathologist, but as a general practitioner, I am much amused at the remarks made here about the general practitioner. In diagnosing these conditions, especially inflammation of the bone, cold and hot water may be used, and also the x-rays, but the response may be due to an inflammatory condition, or it may be absolutely reflex. The idiosyncracy of the patient ought also to be taken into consideration. Diagnosis of a remote disease of this kind is very difficult, even the most skilful physicians and surgeons have made the greatest mistakes in conjunction with the dentist. I have known of teeth being extracted indiscriminately without any relief of the condition. I recall an instance of a small root being left in the alveolar process. The tooth had been extracted years ago. This patient was under my care for two or three years, also under the care of a physician. He came in about six months ago and said this tooth was troubling him and it would have to be removed. I told him I did not believe there was any tooth trouble, that it was a reflex from some other source. The tooth was removed. Eventually I used the exploring needle and found the remains of a small root. I removed this also, but the man came back inside of several months with the same trouble; no doubt of reflex origin. He died of endocarditis.

The reflex action of the stomach and intestines is remarkable. I recall a patient in whom, when these stomach and intestinal conditions would come on, a swelling on the left side of his tongue would appear. This is outside of the discussion, but only goes to show how misleading cases may be.

Dr. E. A. Bogue, New York: During the past thirty years I have extracted or caused to be extracted only five good firm teeth. At present I have a case which has been going on for two years. The patient has been to nine different physicians, and no one has been able to discover the cause of his neuralgia. One man thought he found it in the inflammation of the Eustachian tube. He treated him and the pain subsided and stayed away for three weeks; then it returned. No one has since been able to stop that pain for more than three consecutive days. I do not think any one stopped it; it stopped itself. Thirty years ago in New York the practice of examination of each tooth separately was advocated and Dr. Bronson read a paper at that time advocating the isolation and careful examination of each tooth. I have myself subjected my teeth to examination by six or eight different men. One hurt me so much I did not get over it for two days. Not one of them, according to my idea, made a proper examination.

A surgeon, one of the professors of the Post-Graduate Medical College, brought a woman to my office with a swelling in the roof of the mouth. I suspected some trouble with the permanent molar on the right side. She said, "Impossible, I have just come from Dr. So-and-So a week ago, and he said my teeth are in perfect order." I found on the right side two cavities between every two teeth. Dr. Rhein intimates that we do not get the results we are after along diagnostic lines. It seems to me that we should outline among us here a careful examination of such a nature that it may be possible to those who can not afford radiographs of each case. That is not applicable to people at large. We have not time to put in that way, and the patient can not afford it; the great bulk of sufferers can not have it. A specialist and (so-called) oral surgeon described at Albany one time a case of pulp nodules, as he called it, which he had been able to diagnose causing facial neuralgia. He agreed with the patient that he would cure him for $1,600, and after an examination he found a big hole and put some arsenic in, and got his $800 to begin with. After the arsenic had been there twelve or fourteen days the slough was removed and he got his other $800. The facial neuralgia was cured.

I will confess my own utter inability to conceive any cause for the facial neuralgia which exists in the case which I mentioned. Transillumination has been tried. Every single tooth in the mouth has been either isolated by a rubber dam or cotton or both. There are a number of vacant canals. The patient's mouth has not been radiographed. I made the suggestion to him, but it has not been done to my knowledge. The pain is referable from time to time to the Eustachian tube on the right side. I feel certain there is no pulp exposure anywhere, no calcic abscess anywhere. I have not drilled into the roots.

I am glad Dr. Rhein has concluded that it is not wise to leave any pieces of pulp in the canal, and I hope he will agree that they are not easily removed in their entirety. I have seen several canals so small that it could not be removed at all.

Dr. M. L. Rhein, New York: I felt in the discussion of this subject we should not enter into the question of dental technic, but I do feel that so long as this is going into print I want emphatically to contradict the final statement of Dr. Bogue that it is impossible to remove the pulp contents of fine dental canals, and of the impossibility of removing pulp contents unless arsenic is used. I can demonstrate by means of radiographs of such cases the possibility of the stomatologist getting to the end of the finest canal, and I also want to protest emphatically at this time against the use of arsenic in treating these patients at all. I take an entirely opposite view from Dr. Bogue in this respect, because the very action of arsenic, its irritating effect on the tissues involved, is of such a nature that it is not an unusual etiologic factor in producing peripheral neuralgias.

Dr. F. V. Hussey, Providence, R. I.: I agree with Dr. Talbot in ascribing a great deal of importance to intestinal conditions. I believe thoroughly that the toxic state of the body resulting from a disordered intestinal condition has a great deal to do in many instances with so-called cases of facial neuralgia. The question of dividing neuralgias into minor and major types is simply theoretical for ease of discussion. We can not draw a sharp dividing line. I am of the opinion that the majority of these cases are of peripheral origin. The mere fact that we can not lay a finger on the peripheral cause does not necessarily mean that no cause is there. We know the body is constantly receiving peripheral stimuli, whether we are awake or asleep, and the fact that we are not always conscious of them does not necessarily exclude them.

Another thing which makes me think the pathologic findings which have been recorded in ganglia have been due to peripheral causes are that these findings are always very much more pronounced after preliminary peripheral operations; and in studying pathologic ganglia we should draw a distinction between ganglia which have been removed before peripheral operation and those removed after peripheral operation.

One point I wish to bring out is that medical treatment should not be indulged in too long without satisfactory results. The mere fact that a patient comes into your office and you prescribe for the pain and for the time being stop the neuralgia, does not necessarily mean that you are doing right by allowing that patient to drift along until he comes back. I think that if after three or four months of medical treatment a patient shows no signs of improvement he should be turned over to some one who can institute more radical means.

Thorough examination of the mouth, nose, eyes, ears, etc., should be made in all obscure cases. If we can eliminate disease of these structures we are so much better off.

While I believe that a cure can be promised much more definitely as a result of intracranial operation, we can not always do it. Other methods bring good results, and although they may be only temporary in the majority of instances, we can promise relief for a short time anyway.

The percentage of relief with alcoholic injection has been higher than with any other so-called palliative treatment. The mere fact that these cases recur five months, on an average, after the first injection, is no argument against the use of that method. It has been the experience of men using this method that recurrences after repeated injections become farther and farther apart.

Dr. Schlösser, who has had more experience than any one else, has taken the ground that by repeated injections you can offer a patient definite cure. It seems to me that the fact that the pain does recur is no argument against the injection treatment. I think Dr. Powers' theory in the case he recites, of a callus resulting from some injury to the jaw when the tooth was extracted, is a good one. We do know that certain exostoses will produce neuralgia, and there are cases on record in which removal has cured the trouble.

A STUDY OF MALNUTRITION IN THE SCHOOL CHILD *

[Editor's Note: The article with the above title, by Dr. E. Mather Sill, New York, appeared in The Journal, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

Dr. E. S. Talbot, Chicago: This paper covers so much ground that it is difficult to discuss the entire matter. There are some points, however, of unusual interest to stomatologists. We all know that adenoids occur at an early age; this is also true of deformities of the turbinates and other bones of the face, nose and jaws. If the child be poorly nourished during the period of development—from the first to the twelfth year—it stands to reason that these tissues will cease to develop and will not improve later in life; that is to say, they become arrested or excessively developed and remain so. Since the brain presides over the development of the tissues of the body, when the brain is not properly nourished the poorly nourished nervous system affects the blood supply, produces arrest of development of the face, nose and jaws, and malnutrition of the teeth. I have called the attention of the profession for the last four years to the fact that the teeth are involved in malnutrition. In the eruptive fevers and other constitutional diseases the teeth do not develop strength as they would in health. I think the essayist has brought out these conditions in a general way very well. We all know that the slum children of European cities, as well as of New York, are the most poorly nourished, have the greatest deformities of the face, nose, and jaws, with adenoids, hypertrophies, etc. It is in our province as physicians and dentists to aid these children toward being properly nourished and cared for, more especially during the early developmental years, and I am sure much could be done toward alleviating, or rather preventing, deformities of the jaws and teeth, which in turn would in a large measure improve their mental qualities.

Dr. W. C. Wendel, Milwaukee: In our city we have been endeavoring to ascertain whether the children in the poor wards in the school districts are more subject to dental caries than the children in the better wards. We find very little difference between these poorer children, who have probably never consulted a dentist, and those in the better districts. We investigated some of the other school districts, where they are not exactly the poorest, but the medium class, although in these districts some attention is paid to the teeth, yet we find practically the same conditions, viz., dental neglect. Carious teeth among these children is not even so great as it is among our "better class." Tuberculous patients often have extremely fine teeth. In other cases, in which the parents are apparently healthy, we find exceedingly carious teeth in the children. Investigations have not been carried on extensively enough in this direction to be of much value, but I am of the impression that there is something deeper seated in the civilization of our people than local causes. At the same time we can not deny that malnutrition has a great deal to do with the building up of the osseous structures.

Dr. E. A. Bogue, New York: Dr. Sill did not go far enough back in his discussion. We must go back to infancy to trace the history of most of these carious teeth in children. Dr. Cronin, as you all know, has done considerable work in the matter of examination of school children. He is even now arranging for a system of school-houses, desks and seats, and a dietary and general treatment for all children under the care of the teachers. He takes the ground that we are not sufficiently paternal in this matter. That, having taken charge of the children during the hours of so-called education, we should care for them morally as well as physically. He points out that if physical defects can be corrected, either by diet or anything else, that it will cost less to correct them than to suffer the absence of children so constantly from school. I have elsewhere taken occasion to allude to the fact that 40 per cent. of the absences of school children from school are due to dental conditions--preventable by proper care.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

Referring to the dietary, there is one thing that should be added here—the performance of function. There can be no perfect development of an organ unless its function is brought into use. If the masticatory apparatus is brought early into use, development will be far better than it is.

DR. E. S. TALBOT, Chicago: As to Dr. Bogue's criticism, I was not speaking of prenatal influences. No doubt the first period of stress is the most important to be considered. All deformities of the new-born are due, to a greater or less extent, to malnutrition, as the essayist has said. The effect, however, may be originally on the mother instead of the child.

DR. M. L. RHEIN, New York: I think Dr. Bogue has called attention to the most important feature of the whole subject. As I understand it, the essayist is endeavoring to elicit the sympathy and care of the state in overcoming this condition of malnutrition in school children. That the condition exists is most evident, and I think a careful investigation of the facts from an economic point of view will bear out the correctness of the theory that if the state intends to educate the children it can not overlook the fact that the children must be maintained in a proper physical condition to be educated, but I agree with Dr. Bogue that mere dietary considerations are not the all-important consideration. In other words, the condition of malnutrition can not be corrected by dietary measures alone.

Dr. Bogue has fittingly alluded to the fact that function of the parts must be maintained. It is impossible for us to correct the antenatal conditions. That does not lie in the power of the state. The conditions that tend to the producion of deformities and caries of the teeth exist, but the point remains that the malnutrition can not be corrected unless those conditions are primarily attended to. When these conditions exist, on account of the pain involved and the discomfort, the children will not masticate their food; so the first consideration is to put the mouths of these children in a condition that will make mastication possible, in order to produce the proper metabolic changes in the food to bring about assimilation and digestion. I think it becomes our duty to point out the fact that all the conditions resulting from malnutrition are to a large extent dependent on the proper mastication and insalivation of the food before it is swallowed, and that without the performance of these functions digestion and assimilation of the food becomes impossible. It is therefore essential that the organs of mastication be placed in a normal condition before that child will be able to use them properly.

DR. ARTHUR ZENTLER, New York: From information I gather from abroad, I find the subject has been gone into very thoroughly there—that they recognize the need of the state taking care of the mouths of the children. This is especially so in Germany, where Dr. Jessen and Dr. Rose have organized the school dental clinics, and the care of the children is begun in the kindergarten.

It seems to me that with proper care in infancy and in the kindergarten the question of the teeth of the public school children would be to a large extent solved. If we will do something toward the development of the maxilla and the mandible of the child in its infancy through proper nourishment, it will not be necessary, as a rule, to do anything in future years.

DR. G. I. BROWN, Milwaukee: I feel that we are under obligation to the essayist for the results of his great undertaking in examining 1.200 children on the East Side. He has dealt with their sociologic relation to our special field as affected by poor food, bad air, lack of air space, etc. It is plain that oral disease resulted, not only from immediate ill-nourishment in the instance of each individual, but that it went back to the time before he was born. If the mother did not have sufficient food or air, and was bearing ten or eleven children, one right after the other, it was impossible that these children could have been sufficiently nourished. Therefore, each of these factors have had an influence on the child. Dr. Wendell's point is well taken when he calls attention to the fact that it is not so much the kind of food,or the amount taken, but the benefit derived from what is taken, and, more than that, the part of the individual which is most benefited. We must not assume that only poor people have caries. After all, the question is, how much or how little of the food taken is of nutritive benefit to the individual and what effect this has on dental caries. I do not know any better way of getting at this than by such work as has been outlined by Dr. Sill in his paper. I think we are to be congratulated on having such a paper in this Section.

DR. W. C. FISHER, New York: I agree with Dr. Brown that this question is more of a sociologic problem than most of us realize. Unless one has worked in poor sections he can not appreciate the labor necessary for the production of such a paper as has been presented. These investigations are necessarily conducted in the congested districts, because it is here that we find these conditions to such an alarming extent. And how can it be otherwise under existing conditions? How can a laboring man who is fathering from seven to ten children earn enough money to procure food and shelter for them? It is impossible. It therefore sifts back to the sociologic problem. How can we better the condition of that family so that that man can provide for his family?

Dr. Sill compares conditions here with those in England, Scotland and Germany. He takes nations in which the people are all of one nationality. It is far easier to school a nation by its own people. The East Side of New York is made up of the most conglomerate collection of humanity imaginable. You can not teach these people—you can not talk to them; they speak so many different languages—hence the only way is to legislate for them. In other words, these immigrants—for they are mostly immigrants or children of immigrants—come in by tens of thousands and go to these already congested districts. The father can not get work; he can not provide food; and as a result we have these physically impoverished children. The whole remedy, it seems to me, will be found in the word "scatter." If these people could be distributed to the less congested districts, where they could find employment and better air, you would find they would provide food for the children, and the children would find a way to masticate it, and if they complain of the toothache they would be sent to the dentist. Those people are human beings. Give them proper environment and they will improve. We can not expect to improve them under existing conditions. They are massed together so closely it is like taking an ant hill and pushing it down in one place and it comes back in another. Good tenements won't do the work—get these people out of the tenement district. Dr. Sill states that within a few miles there are many thousands of people, enough to make a city. The moral tone is bound to be low, and the mind affects the body. There can not be a healthy body with an unhealthy mind. Until you change their conditions you can not help them. You can give them food every fifteen minutes and they will not profit by it.

DR. W. C. WENDELL, Milwaukee: Dr. Fisher spoke more on sociologic and moral lines. What I would like to know is: Do you find more caries in the mouths of this class of people, and more pathologic conditions, irregularities, adenoids and contracted arches, than you do in the better-fed class?

DR. E. A. BOGUE, New York: One of the British writers on the subject of adenoids called attention to the fact that on the equator about 3 per cent. of the population had adenoids, while in Greenland there was something like 40 per cent. I talked with Dr. Grenfell of Labrador, the missionary-physician, who told me that he thought there was over 30 per cent. in Labrador. There the people live largely on blubber. In the north of Scotland and certain parts of Germany, where the people eat oatmeal cake, which is hard and requires mastication, you will find good teeth and few adenoids—that is, among the older people. I have not examined the children. But in the generation of today you will find "store teeth." The young folks eat oatmeal, but they do not eat the hard cakes. This is not universally so, but to a large extent the young people eat too soft foods. Our calling is still one of repair; we have not been able as yet to exert the prophylactic measures to prevent these conditions of early decay of the teeth. We are still searching.

Dr. M. L. Rhein, New York: I think Dr. Bogue is just a little wrong in saying that our calling is one of repair. While I am ready to admit that the ideal state of prophylaxis has not been reached in stomatology, yet there is no specialty in the entire field of medicine that has the possibility that we have in stomatology. Of course, the abnormalities of birth that come from defective parentage are those that can not be prevented after the child is born. These are economic and sociologic questions that are not under consideration; but, when they can be placed aside, the future of stomatology lies exclusively in prophylaxis and not in repair. I also disagree strongly with Dr. Fisher's remarks on this subject when he says that it is possible to scatter any such heterogeneous population by any enactment of legislation. In the first place, I know the East Side of New York. I have studied it very closely and I want to say that the people there are employed in occupations—they could not remain there if they were not. It is true their employment is such as is found in London in similar localities, but his prescription is an impossibility on the start because there is use for the employment of these men. If he would modify his statements and say that efforts to induce some portion of this population to be moved to the suburban districts were enforced it would be beneficial. Now, such efforts are being made constantly in the City of New York, but the impossibility of doing anything of this kind effectually is self-apparent. The improvements in the housing of this population have been going on for years, and a great deal of benefit undoubtedly accrues from efforts in that direction. The old tenements, such as were a disgrace to the city, can never be re-erected in the City of New York. The law prevents anything of that kind in the future, and there is no question of a steady improvement in that direction, but I do insist on the point, with all due reference to the value of proper air, ventilation, etc., that it is impossible to get the benefit of proper growth and nutrition unless primarily the dental organs are in a condition of normality, so that they will be used by the child. Consequently, I claim that it is the duty of the State, if it intends to educate the child, to see that the teeth are in such a condition that the child will masticate its food, just as it is the duty of the State to see that the eyes are in such a condition that they can be used normally; and I believe, when you come to sift this whole matter, that that is the most important point that will be left for consideration in order to accomplish the results that the essayist is looking for.

THE TONSILS AND THE TEETH [*]

[Editor's Note: The article with the above title, by Dr. G. Hudson Makuen, Philadelphia, appeared in The Journal, June 19, before the discussion thereon had been submitted to the speakers for correction. The discussion was therefore omitted at that time and is now presented below.]

ABSTRACT OF DISCUSSION

Dr. Frederick Lester Stanton, New York City: Dr. Makuen suggested the possibility of the enlarged faucial tonsil having a direct mechanical effect in pushing the alveolar process and teeth of the lower arch forward of their normal position, and that he has been unable to find anything similar to this theory in the literature of this subject. There has, however, been a similar theory advanced. In order to relieve the pressure on the enlarged faucial tonsil, the child has held the mandible forward, causing the teeth to lock in a malrelation, and in consequence the mandible has been developed to meet the needs of these unbalanced muscular forces, in this way producing a protruding lower jaw.

Dr. Charles K. Teter, Cleveland: I am much interested in this subject, as I have been closely connected with this kind of work for the last six years, but I do not entirely agree as to the necessity of complete extirpation of the tonsil, that is, in the majority of tonsil operations that are done by throat specialists to-day. I have worked with eight or nine leading specialists, and there are probably four or five who do complete extirpation every time they operate; and the others use their judgment in the matter. I have been in a position to compare the results of these operations, and when it comes to my own children—I have three and two had to have their tonsils removed—I prefer tonsillotomy. One child, 8 years old now, was operated on four years ago and has never had any trouble since. The other, about 4 years of age now, was operated on about a year ago. In children it is necessary to give a general anesthetic, and a tonsillectomy under these circumstances comes near to being a major operation; the hemorrhage is profuse, and it takes some time to do it properly. In an adult it is different, because complete extirpation may be done under a local anesthetic. I have had opportunity to follow up a good many cases, and I find in the majority of cases in which tonsillotomy was performed the after-results are just as good as in tonsillectomy.

Complete extirpation does not always end the trouble. Cicatricial tissue forms, which one of the surgeons states gives him more trouble than leaving part of the tonsil.

I have known in the last year of four cases of hemorrhage in which the patient almost lost his life, and the tonsillar pillars had to be ligated to stop the hemorrhage; so I do not think we should do a tonsillectomy in all these cases. I prefer tonsillotomy in children; in adults, if they have diseased tonsils, I prefer complete extirpation under local anesthesia.

Dr. G. V. I. Brown, Milwaukee: I had the pleasure of seeing Dr. Makuen operate last summer, and I am willing to subscribe to whatever he says with regard to methods of operation in tonsil removal. One point in his paper which I believe to be important has not been touched on in this discussion, that is his reference to tonsils which are enlarged, but not visibly so, because they are buried between and behind the faucial pillars. Recently I was asked to examine a patient who seemed to have rather small, certainly not large, tonsils, and a few minutes later two enormous tonsils were placed in my hands that had been dissected out from under the overlying tissue for the same individual. Undoubtedly, tonsils such as these would cause the conditions Dr. Makuen has called attention to, and unfortunately, if dentists depend on themselves for diagnosis, such conditions would often not be discovered sufficiently early to prevent their leading to serious pathologic results.

Dr. E. A. Bogue, New York City: We all know that children whose tonsils are enlarged will close their teeth in such a way as to promote an irregularity of the dental arches. I happen to possess models of two children taken at different periods of their lives during three or four years, and I think that the progress from almost a normal condition to very great abnormality is evidenced very clearly in those models. It is exceedingly interesting to me to hear Dr. Makuen bring that very point up. I have never heard it alluded to before. I am glad that Dr. Makuen spoke of the vicious circle—bad tonsils and bad arches. This is indeed a vicious circle, and as the proceedings of this section will be read more or less by medical men and by dentists, I think that is an important point which has been pretty much neglected. That the attention of dentists is being more and more directed to the entire oral cavity is unquestioned.

Dr. E. S. Talbot, Chicago: As to infection of the alveolar process referred to, I do not quite understand just what Dr. Makuen means by the relations of the tonsils to the teeth. There is no question but what there are germs in diseased tonsils, and there are germs in decayed teeth, but how the tonsil can affect the teeth I do not understand. But there is this point in relation to the teeth which I think Dr. Makuen intended to bring out, and that is that in all patients we have more or less interstitial gingivitis, inflammation of the alveolar process and the gums. We can not have infection of those structures without first an inflammation, then there must be pus germs to infect the part, which would be understood as pyorrhea alveolaris. When the tonsil becomes infected with pus germs we have interstitial gingivitis producing pyorrhea alveolaris, and on treating the tonsil or removing it and afterward curing the pyorrhea alveolaris, it does not occur again, although the interstitial gingivitis may remain. The vicious circle is all important, especially in younger children; the effect on the general system—on the blood and the nervous system is vicious. It prevents growth and development of the jaws and the face and nose as well. We all have seen children develop very rapidly after correction of these conditions.

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[*] Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

DR. G. HUDSON MAKUEN: I had expected that more would be said in the discussion with reference to my note on the effect of hypertrophied tonsils on the alignment of the teeth and the development of the alveolar arches. I have been able to find no reference to this point in the literature, and I should have liked to have had a fuller expression of opinion on it. It should be borne in mind that these large tonsils are sensitive to pressure, as a rule, only when they are acutely diseased, and only a little pressure sometimes is required to determine the position of the teeth and the shape in the alveolar processes. The relation between the faucial tonsils and the cervical glands is a very close one, as has been shown by anatomic dissections, and one observer, after the removal of some cervical glands, actually passed a probe from the wound in the neck into the faucial tonsillar fossa. The other day I removed the tonsils of a small child having a bunch of cervical glands nearly as large as my fist, which almost entirely disappeared in the brief space of one week after the operation. In other cases glandular enlargements in the neck may and do occasionally increase immediately after operations on the tonsils, which fact shows the close relationship existing between these structures.

As to the comparative merits of tonsillectomy and tonsillotomy, I would say that there seems now to be but little discussion. In the recent meetings of the two largest American laryngologic societies, only one man of the three hundred lifted up his voice in favor of the partial removal of the tonsils, and he was one who had long been a practitioner of the specialty, and he was loath to give up his older methods. Only diseased glands, of course, should be removed, and when we have once decided on the operation, I think we should remove all the diseased tissue, and we should not be deterred because the operation is more difficult or because there is likely to be more hemorrhage. With reference to this last objection, I may say that there are those who think the hemorrhage is greater after tonsillotomy than after tonsillectomy, because blood vessels cut through in fibrous tissue do not contract so readily as those not so surrounded. The operation is not a simple one, but requires some skill and dexterity. The removal of only a portion of the tonsil, beyond giving more breathing space, may do more harm than good by making of the diseased stump a more fruitful source of infection.

Dr. Brown's point with reference to submerged tonsils is a good one. The tonsil that protrudes into the pharynx and hangs, as it were, by a pedicle, is probably the least harmful, because it has better drainage and it does not admit of so much absorption of infected material in the general system. In reply to Dr. Talbot, I am of the opinion that foul detritus exuding from diseased tonsils must have a more or less injurious effect on the teeth, and from what he has just said, I gather that he agrees with me thoroughly on this point.

Clinical Notes

GONORRHEAL EXOSTOSIS OF THE OS CALCIS

REPORT OF CASES

GILMAN J. WINTHROP, M.D.
MOBILE, ALA.

Baer,[1] in 1906, called attention to certain cases characterized by pain over the plantar surface of the heel, due to a chronic inflammatory change, of gonorrheal origin, located in the flexor brevis digitorum muscle, with secondary new formation of bone or exostosis at the attachment of this muscle to the tubercle of the os calcis.

Nobl,[2] of Vienna, had previously noted exostoses on the posterior surface of the os calcis, due, he thought, to inflammation of the sheath of the tendo Achillis, and suggested that they might, perhaps, be of gonorrheal origin, but this was not proved.

L. Jacquet[3] and Painer[4] also described exostoses on the posterior calcaneal surface, but were unable to determine the etiologic factor.

Ely[5] refers to a condition he names "gonorrheal foot," and states:

> It is characterized by extreme sensitiveness, usually in the soles. A history of a comparatively recent infection by the coccus of Neisser can be obtained, and the urethra will be found affected. These feet have something about them that immediately makes one suspicious, but further than the extreme sensitiveness and the fact that the patients walk as if they were treading on eggs, I can not tell exactly what it is. Even the pathology is a matter of doubt, for the condition is not one to justify an operation, and the diagnosis is a mere matter of empiricism.

It is quite possible that he refers to cases of gonorrheal exostosis, but he reports no skiagraphic or pathologic findings.

The paper of Baer,[1] I believe, first definitely describes and proves the gonorrheal origin of the condition he terms "gonorrheal exostosis of the os calcis."

Following the report of six cases by Baer, Jaeger,[6] in 1908, reported eleven others, and Davidson[7] adds the eighteenth case. I wish to add to this number the histories of two cases.

This affection is probably not uncommon, but the chief symptom, that of pain under the heel, is usually ascribed to some other condition—flat foot, tuberculosis, osteomyelitis or sarcoma of the bone, neuritis, bursitis, chronic rheumatism, rheumatoid arthritis, Schaffer's foot and the various other conditions associated with painful heel—and the close relation of an existing or previous gonorrhea is overlooked.

PATHOLOGY

Baer[1] believes that the initial process is located in the flexor brevis digitorum muscle and extends down to the os calcis. The chronic inflammatory process produces, first, exostotic growths at the attachment of the muscle to the tubercle of the os calcis and, secondarily, other bony growths may develop on the sides and posterior surface of the calcaneum or in the adjacent tendons. Jaeger states that "pathologically the process is an ossifying periostitis." Gonorrheal arthritis and exostoses between and along the vertebra may be coexistent. Baer demonstrated gonococci by culture in 1 and in sections in 2 of 4 cases examined. Jaeger reports positive findings of gonococci in one case. Cultures taken in Davidson's case proved to be sterile.

SYMPTOMS

1. *Pain.*—This, the chief symptom, is referred to the plantar surface of the os calcis, is very limited and present only when the patient bears weight on the foot or on direct pressure over the exostosis. Both feet are generally simultaneously affected. Usually there is no

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[1] Baer: Surg. Gynec. and Obst., February, 1906.

[2] Nobl: Fersenschmerz der Blennorrhoekranken, Ztschr. f. Heilk., xxiv, 273, quoted by Baer: Surg., Gynec. and Obst., February, 1906.

[3] Jacquet: Ann. de dermat. et de syph., 1892, p. 681; quoted by Baer: Surg., Gynec. and Obst., February, 1906.

[4] Painer: Tr. Am. Orthop. Assn., xi; quoted by Baer: Surg., Gynec. and Obst., February, 1906.

[5] Ely: Rheumatism of the Feet, Med. Rec., Aug. 5, 1905.

[6] Jaeger: Am. Jour. Orthop. Surg., January, 1908, v, No. 3.

[7] Davidson: Med. Rec., Oct. 3, 1908.

pain on moving the foot, unless secondary osteophytes be present about the attachment of the tendo Achillis or mediotarsal joint. Pain about the ankle, knee or in the calf muscles may occasionally occur, because of strain on muscles or tendons from the unnatural gait of the patient.

2. *Gait.*—The extreme tenderness of the heel causes the patient to throw the body weight forward to the ball of the foot and gives a tiptoeing gait. His steps are slow and careful.

3. *Deformity.*—There is but little noticeable deformity. Periosteal thickening often produces a swelling on either side of the calcaneum. Occasionally very large exostoses may be felt on the bottom of the os calcis.

DIAGNOSIS

The complaint of pain in both heels and admission of an existing gleet or attack of acute urethritis some months previously, generally three to nine months, are suspicious. These, with the presence of the tender spot over the tubercle of the os calcis, absence of acute signs of inflammation and the gait should lead to an *x*-ray examination. Skiagraphs show a pointed or slightly bulbous bony growth springing from the tubercle of the os calcis and varying in size from "that of a pea to that of a marble." Occasionally there may be multiple exostoses. All the cases recorded have occurred in adult males. The exostoses are commonly bilateral.

TREATMENT

All measures save operative seem of little avail. Baer reports five patients operated on with cure. Jaeger obtained excellent results in six patients operated on. Davidson's patient was fully relieved by operation.

An incision is made along the inner side of the heel parallel to the plantar fascia, exposing the lower border of the os calcis. The tissues are retracted and the exostosis chiseled or curetted away. The wound is closed with silkworm gut without drainage. Baer also used in several cases a plantar incision directly over the exostosis. Jaeger also employed the plantar incision and introduced a cigarette drain for twenty-four hours. The lateral incision is probably the better, as it admits of clearer exposure and the resulting scar is not subjected to pressure as when located on the bottom of the heel. Drainage is unnecessary, as there is but little bleeding and the wounds heal by first intention.

CASE REPORTS

Case 1.—*Patient.*—J. S., white man, aged 19, was admitted to Gouverneur Hospital,[8] New York, Sept. 11, 1907. Family history unimportant. Patient had measles and pertussis as a child. He was an electrician and was not subjected to an unusual amount of standing or walking.

Present Illness.—Patient had an attack of acute gonorrhea three months before admission, which was treated for several weeks. Three weeks before admission he noticed slight tenderness in both heels on walking. Tenderness had grown steadily worse and latterly in the evenings he had had some pain in ankle and running up to knee. The heels were never red or swollen and pain was noticed only on standing or walking.

Examination.—Patient was a rather poorly nourished man; general examination otherwise negative except for the presence of enlarged inguinal glands on both sides and for the tenderness under heels. On under surface of both heels there was marked tenderness over a very limited area. No swelling, redness or deformity was to be made out. Patient walked with great pain and threw his weight forward on to ball of foot, keeping heels free from the floor. Temperature, pulse and respiration were normal. Blood examination was normal; urine, normal except for presence of "clap shreds." Skiagraphs showed presence of exostoses on under surface of both ossa calcanei. Gonococci were determined in pus cells from the urine. The exostoses were, unfortunately, not examined for organisms.

Operation.—Ether. Right heel: Incision on inner side. Os calcis exposed and exostosis (½ inch long and ⅜ inch high) removed. Wound closed without drainage with silkworm gut. Left heel: Incision on plantar surface of heel; exostosis, about same size as in right foot, removed. Wound closed with silkworm gut. No drainage.

Postoperative History.—Wounds healed kindly and patient discharged November 28. All symptoms relieved. The pain in ankles and knees of which patient complained was evidently due to muscular strain produced by his abnormal gait in effort to relieve heels of pressure. This pain disappeared entirely after patient was kept in bed.

Case 2.—*Patient.*—X, man, aged 20, was admitted to Gouverneur Hospital,[9] New York, April, 1908. Family and past history unimportant.

Present Illness.—Some nine months before admission the patient contracted an acute gonorrheal urethritis. He was treated with urethral injection until the acute symptoms abated, when treatment was discontinued. He noticed a slight mucoid discharge in the mornings for some time after stopping treatment. About four months before admission he felt slight tenderness in heels when he first walked in the morning but this gradually wore off during the day. Lately this tenderness had grown worse and persisted all day, seriously interfering with walking. He had been treated without improvement for flat foot and rheumatism.

Examination.—Patient was a fairly well-nourished young man. Thoracic and abdominal organs were normal. Prostate was slightly enlarged and firmer than normal. Inguinal glands, especially of left side, were enlarged. Urine showed gonorrheal shreds in first glass; second and third glasses clear. On plantar surface of both heels there was marked tenderness on pressure and walking was quite painful. No redness, swelling or deformity was noticed about heel; no pain on movement of foot. Gram-negative diplococci were determined in cells from urine. Skiagraphs showed a pointed bony growth springing from the tubercle of both ossa calcanei.

Patient was treated with hypodermic injections of gonorrheal antitoxin for three weeks but without improvement.

Operation.—May 4, 1908. Ether anesthesia. Right foot: Incision over inner side of right heel exposing exostosis, which was chiselled away. Wound closed with continuous catgut suture. No drainage. Left foot: Plantar incision over tubercle of os calcis. Exostosis, not so large as in right foot, was easily removed with rongeur forceps. Catgut closure and no drainage.

Postoperative History.—Wounds healed by first intention. Patient discharged on twentieth day after operation. Very slight tenderness persists under left foot, probably because of scar.

204 Conti Street.

HAIR SICKNESS

H. F. GILLETTE, M.D.

CUBA, N. Y.

I wish to call the attention of those who are interested in the various phases of serotherapy to a disease which affects workmen in hair-cleaning mills. The hair from various animals is received at the mills in bales which are opened and the hair is put into machines which separate the hair from dust and other foreign material, and the workmen necessarily inhale much of this dust which, in part, is the dried secretion of the sudorific glands of the animals from which the hair came.

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[8] I am indebted to Dr. H. M. Silver, visiting surgeon to the Gouverneur Hospital for permission to publish this case.

[9] I desire to thank Dr. Edward L. Kellogg of New York City for permission to report this case.

The workmen recognize a disease, or reaction which they call "hair sickness," which comes on from 3 to 5 days from the time a new workman is first exposed to the dust. The sickness is characterized by a severe chill which comes on in seeming health, and a fever which may reach 103 to 104 F. The patient experiences severe pains in the head, back and extremities, and has nausea and vomiting. He usually is confined to the bed for a week or more. When he recovers he is immune to the disease so long as he continues to work about the hair, but if he leaves the mill for a year or two his immunity ceases and he experiences the reaction again if he resumes work about the hair. The mill hands claim that hair which has been removed by clipping machines from live horses is more toxic, and that the reaction comes on earlier and is more severe than that of other animals.

Workmen who are subject to asthma, or who look for a return of hay-fever on a certain date, are quite sure to be free from the asthma and hay-fever while working about the hair, but the immunity ceases after a time if they leave the mill and enter other work. Horse serum is used in the human subject because its effects are milder than the serums from other animals, yet if the observations of workmen are correct the dust from the horse is more toxic than that from other animals. One explanation of the seemingly increased toxemia from the dust from horse hair is that it comes usually direct from the clippers and with all the dust retained, while the cow hair which is received has been passed through a tanning process which washes out the dust.

It is possible that something on this subject has been reported, but I am not able to find any reference to the reaction or toxemia described.

[EDITOR'S COMMENT.—This interesting account of what seems to be a special "trade disease" suggests the possibility that the symptoms described may be due to an infection rather than to an intoxication by any constituent of the hair. The sharp rise in temperature, the chill, and the general symptomatology are distinctly more in harmony with the course of an infection than with any intoxication with substances of animal origin. This possibility is made more plausible by the statement that the hair from hides that have been tanned seem less toxic than that derived from living animals. The process of tanning would naturally destroy the bacteria. Cultures from the blood might throw light on the etiology of the disease, which is assuredly well worthy of investigation.]

USE OF APPENDIX TO SPLICE THE URETER

HARVEY P. JACK, M.D.
CANISTEO, N. Y.

During some recent operations in the pelvis, in which the ureter was bared during the dissection, it occurred to me to see if it would be possible to use a healthy appendix to splice the defect caused by any injury of the ureter or by the involvement of an inch or two of it in cancerous disease, requiring the sacrifice of that portion. I found that I could bring the appendix over this place in the ureter without traction on its mesentery. Since these operations, whenever I have opened the abdomen either for removal of the appendix or for any other operation, I have attempted to ascertain if it were possible to bring the appendix over the ureter. My investigations have confirmed my opinion that it would be possible in a right-sided injury of the ureter to splice the defect with a healthy appendix. So far as I know this is an original idea.

PELLAGRA IN ARKANSAS

O. L. WILLIAMSON, M.D.
MARIANNA, ARK.

The following case came under my care July 28, 1909:

Patient.—Virginia C., negro woman, aged 23, field hand, married, has child 4 months old. Family history negative. Patient has had attacks of malaria; no syphilis; has always used corn-bread in preference to other breads.

Present Illness.—This began about May 20, 1909, with "sore mouth." Patient had considerable difficulty in eating on account of pain. About June 1 a skin lesion appeared on the proximal side of the palm of the right hand. This was followed in about a week by a similar lesion on the dorsal surface of the left hand. These lesions increased rapidly in area. They were thought to be due to burns, although patient could not remember having burned herself. The lips soon became affected with a moist lesion. Patient began losing flesh rapidly but continued to work in the fields. About July 10 diarrhea began. The stools contained blood and mucus but were not accompanied with tenesmus. She had no nourishment for the baby after July 14. Nausea and vomiting began July 25.

Examination.—On July 28 I found patient weak and emaciated. The dorsal surfaces of both hands were covered with a dark lesion that appeared somewhat like an old burn. The skin was thickened, rough, and very black in places. Portions of the surfaces were covered with crusts while others were entirely raw. The condition was exaggerated on the knuckles and between the fingers. There was some pus between the fingers. The palms were also affected but the lesions there were drier and there was considerable exfoliation. There were no raw surfaces on the palms. Both hands were slightly swollen. The affected areas were symmetrical in size, shape and position and extended from the tips of the fingers to about the juncture of the lower and middle thirds of the forearms. There were painful exfoliating areas on the lips. The tongue was red, smooth and painful. Stomatitis was evident. The temperature was 101 2/5, pulse 150, respiration 20; heart rapid but otherwise normal; lungs, liver and spleen normal; abdomen slightly tympanitic and tender. The skin of the abdomen appeared somewhat like that on the doral surfaces of the hands, being thick, rough and abnormally dark. The pupils were equal and reacted to light and accommodation. There was slight decrease in tactile sense over affected areas. The knee-jerk was normal on the right side but decreased on the left. There was no ankle clonus and nothing abnormal about the gait. The patient's mind was clear and she had neither headache nor vertigo. She complained of being tired, weak and thirsty; had pain in back of neck and itching of affected parts. She was restless at night and had had chills the past three nights; was still suffering from nausea, vomiting, loss of appetite and diarrhea. She had lost thirty pounds since June 10 and had become too weak to sit up long at the time. The urine contained neither albumin, casts nor sugar, the only abnormality being an increase of indican.

Examination of Blood: Hemoglobin, 95 to 100 per cent.; prolonged search revealed one estivoautumnal parasite. Polychromatophiles and macrocytes present; blood platelets decreased. Differential leucocyte count; small mononuclears, 23 per cent.; large mononuclears, 15.3 per cent.; polynuclears, 59.2 per cent.; eosinophiles, 2.4 per cent.

PAROXYSMAL TACHYCARDIA ASSOCIATED WITH ANGINAL SYMPTOMS

T. WERTZ, M.D.
PRINCETON, IND.

This condition began in my own person about six years ago, first with the loss of a heart-beat about every five to twenty beats, more particularly after meals and after exercise. There was little or no discomfort from the irregularity. Repeated examination of the heart by experts failed to discover any heart lesions. This condition continued for a period of about four years without any apparent increase in the irregularity and no other subjective symptoms.

ANGINA APPEARS

About two years ago anginal symptoms with tachycardia first made their appearance. At first the pain about the heart radiated into the left shoulder, and in a short time subsequent into both shoulders. This rapid heart and pain was always brought on by walking at my usual pace for a distance of two or three blocks, and at these times the heart would be very irregular. As time went on these paroxysms were excited by walking, by any sudden movement or mental excitement. At the height of this trouble night attacks occurred some time after retiring for two or three times at intervals of several weeks. These night attacks would last half an hour or more, the heart beating very rapidly—four or five times faster than normal. The attacks brought on by exercise usually quieted down after five or ten minutes of rest. With these paroxysms the heart irregularity was very great, losing a beat every three or four pulsations. After this condition had lasted about a year it began slowly to abate in severity so that now after two years the irregularity and pain about the heart is very much less.

Exercise immediately after a meal will set the heart to going; but an hour or more after the meals I can walk at a moderate pace for a mile or more with little discomfort. I feel perfectly well and comfortable when at rest bodily and mentally, with usually little or no irregularity of the heart and about 70 beats a minute. But this cardiac quietude is easily disturbed. In the morning hours before rising or with some mental emotion there will be a sudden jump of the heart beat to many times the normal. This unsteadiness seems to be associated with the congestion of the brain from the long recumbent position. Every morning this rapid heart action is a prominent factor while dressing. In the last six months a soft systolic initial murmur has developed without any other apparent heart lesion. All other bodily functions are normal and well performed. I am six feet tall, weigh two hundred pounds, am past 60 years of age and have always heretofore enjoyed good health and come of a long-lived family.

I have tried many forms of treatment with drugs, but without any apparent benefit, except during the first year of the severe symptoms. These were held in check or slightly modified by nitroglycerin pellets if taken before walking. For the last year all drugs have been abandoned. A daily morning cold tub bath will relieve the restlessness and steady the heart.

In addition to this I have discovered that the rapid heart can be instantly brought to the normal rhythm by grasping both carotids with the thumb and forefinger and compressing them against the larynx or trachea. The instant this compression is made the heart makes a single vigorous impulse and at once resumes its normal rhythm. This has been a great boon to me for the last year, as the galloping heart can at once be brought under subjection. The vagi seem to have lost control of the heart's action and this organ is like an engine without a governor. The compression of the carotids increases the blood pressure in the heart which, perhaps, through a better nutrition, steadies the cardiac ganglia. What the exact condition is and just how this compression of the carotids acts beyond increasing the blood pressure I am not prepared to say. But so far as my own case is concerned it has robbed this terrible condition of its sting. I place this statement on record hoping it may be of equal service to others in like conditions.

A CASE OF APPENDICITIS OF TWENTY YEARS' STANDING *

J. H. CARSTENS, M.D.
DETROIT

Clinical History.—Reported by Dr. F. E. Bowman. The patient, Mrs. E. W., aged 60, appears well nourished and robust. Her trouble, which began about the age of 40, was diagnosed as peritonitis and in about five months terminated in an abdominal abscess in the region of McBurney's point, which was lanced. It remained open for about three weeks. After this the right thigh was flexed on the abdomen for about eighteen months. For about eight years thereafter the patient's health was good. Then she fell from a hammock and injured her right hip. One week later an abscess appeared at the site of injury. Almost immediately after the fall, pain was experienced again at McBurney's point. The patient connected this pain with the abscess opening on the hip. In about three weeks she was about her housework in fair health.

After that time there were from one to three recurrences of the abscess openings on the hip, which healed in from three weeks to three months. About ten or twelve years ago she had an operation for appendicitis. The surgeon opened the abdomen at right iliac region and reported that "appendix had sloughed off." He likewise made a long incision on the hip at the site of the abscess opening. Recovery did not take place until ten months later. During convalescence repeated incisions were made on the hip and two on the abdomen, tubes being inserted in both abdominal and hip wounds. A tube was retained in the posterior wound for three years. This brings the history up to some seven years ago. Then for three years abscesses formed from one to three a year. Poultices were applied and the lance used in every instance. For the past four years no abscess formed and the wounds closed. An abdominal hernia developed at the old abdominal incision in the meantime. In September, 1907, another abscess formed, which was opened. It drained freely at times; then would close to reopen in four or five days. In this condition the patient consulted Dr. J. H. Carstens on Dec. 7, 1907.

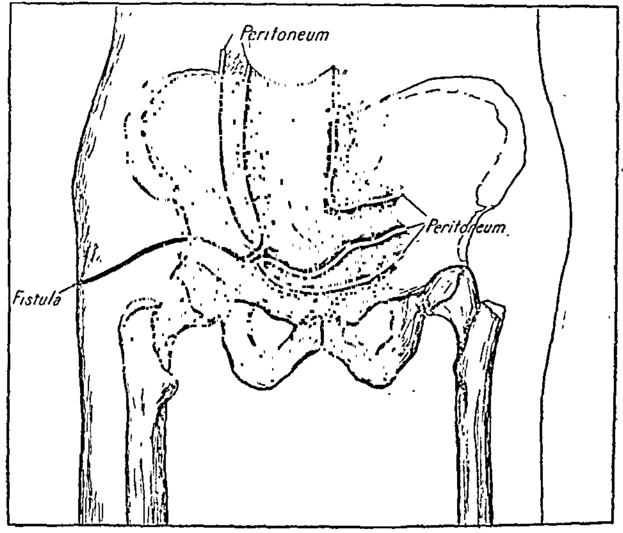

Diagram showing structures involved in an unusual course of an appendiceal abscess.

Operation (December 10).—An incision was made over the hernia. The cecum was adherent to the right iliac fossa and was with difficulty brought to view. A stump of the appendix, about three-fourths of an inch long, was still thoroughly adherent all around to the posterior peritoneum, but the center had passed through the peritoneum and opened behind the peritoneum into the fascia and muscles found in this locality. From there started an opening back of the peritoneum upward, passing over the ilium and then passing downwards around the hip joint, opening just back of the great trochanter. The remnant of the appendix was loosened from its adhesions. The peritoneum was stripped back, making a cuff to the cecum, the small stump of the appendix cut off, and the hole in the cecum closed with fine catgut. First, the muscles and mucous membrane were carefully brought together, the cuff of the peritoneum also sewed and all this amplified by Lembert's suture. A small rubber drainage-tube was then inserted in that posterior opening up to the crest of the ilium and then downward to the skin opening. The tube reached just up to the peritoneum, but not into it. The hole in the posterior peritoneum where the appendix had been was now carefully closed in a similar way to hole in the cecum and amplified with Lembert's suture. The peritoneal cavity was closed. I then resected the muscles where the hernia was, in the flap-splitting manner, put them well together with catgut, and closed the rest of the incision and skin without drainage.

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*Read at Northern Tri-State Medical Association, Toledo, July 13, 1909.

Postoperative History.—The patient made an ideal recovery. The rubber tube at the external opening was gradually withdrawn and in twelve days everything had healed perfectly. The patient has remained in good condition since that time.

Analysis of the case now with a better understanding shows that the appendix (probably two-thirds of it) reached back of the peritoneum originally. I described such cases ten years ago.[1] This part back of the peritoneum became inflamed and suppurated and sloughed off, the pus burrowing, and finally the abscess opened just in front of the crest of the ilium. Later on it burrowed downward and opened near Poupart's ligament, as shown in the schematic sketch I have made.

The adhesions and cicatrices offered more resistance than the loose cellular tissue in the iliac fossa; hence thereafter the burrowing continued over the ilium, then downward around the hip joint, and the abscess would open there. It was, indeed, a puzzling case. Any one looking at the different scars now would naturally make the diagnosis of a former hip-joint disease. A number of times the woman had been apparently well. Everything had healed, but as the result of injury or some trouble with the bowels the valve at the junction of the appendix with the cecum finally opened up. Now fecal and septic matter would get into the little stump of the appendix, and as the end was open (or only covered by the loose muscles and fascia found in the iliac fossa) it burrowed in the direction of least resistance.

As the more resisting peritoneum covered the stump the pus fortunately did not break into the peritoneal cavity and thus the woman's life was saved. Her wonderful power of resistance carried her through all, although she was suffering virtually for twenty years with a suppurating appendix.

620 Woodward Avenue.

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[1] New York Med. Jour., Aug. 12, 1899.

Therapeutics

OPHTHALMIA NEONATORUM

While the treatment of this serious inflammation is generally rightly referred to the oculist, it may occur in little patients whom it is impossible to bring under the specialist's care. Also, the prevention of this inflammation of the eye is of national importance, and should be understood and carried out by every practitioner who takes charge of obstetrical cases.

Dr. Julien A. Gehrung, New York (*New York State Journal of Medicine*, May, 1909), offers good advice for the prevention and treatment of this serious inflammation.

As soon as the child is born and after thoroughly cleansing the eyes, he advises the instillation of a drop of a 1 per cent. nitrate of silver solution. While Credé advised the use of a 2 per cent. solution, Gehrung thinks the 1 per cent. is of sufficient strength. After the child has been washed and dressed and the nurse's hands have been cleansed, he advises the instillation of another drop of the 1 per cent. solution into each eye, and this may be followed by a little physiologic saline solution or a drop of adrenalin chlorid solution (1 to 5,000). This "stops the pain and neutralizes the further action of the silver."

Gehrung believes that this prophylactic treatment is efficient and as satisfactory as can be obtained from any silver preparation.

If in spite of such prophylactic treatment (and he emphasizes the necessity of cleanliness as being next to godliness, both in the care of the child and in the nurse's care of her own hands) the conjunctivæ become inflamed, he advises the use of cold boric acid solution (if the cornea is not involved) and careful cleansing of the pockets of the conjunctivæ. The lid of the eye is gently raised, all pressure being avoided, and the tip of a soft rubber bulb syringe is inserted under the upper lid. Slowly and gently the eye is irrigated with the cold boric acid solution to wash out all purulent matter. "This should be done every fifteen minutes, or oftener if the discharge is profuse."

He next advises the instillation of a 4 per cent. solution of cocain and adrenalin chlorid (1 to 5,000) for its anesthetic effect and to cause contraction of the blood vessels.

The cornea should be carefully watched, and to inspect it properly, if necessary, a lid elevator should be used. If the cornea is involved, hot applications and atropin drops are indicated.

If but one eye is involved, the greatest care should be exercised to prevent infection of the other eye.

Once a day during the inflammation Gehrung applies a 1 per cent. nitrate of silver solution as follows: "Raise the lid slightly, and with a cotton swab saturated with the silver solution gently brush (raising the upper eyelid on the swab) the whole conjunctiva, both upper and lower, being careful to treat the cul-de-sacs thoroughly. Such treatment breaks up all adhesions, opens pockets of pus, and enables the medicament to reach all parts." If bleeding is caused, it does good rather than harm.

The point of the swab should be thoroughly protected by folding cotton over it so that it can not injure the membrane. To apply the above treatment it is not necessary to evert the swollen, painful lids; simple elevation of the upper lid by the retractor is sufficient.

If the disease is severe, Gehrung uses instillations, every one or two hours, of a strong, even up to 50 per cent., argyrol solution, but does not believe this alone is satisfactory, and reinforces it by one daily application of a 1 per cent. solution of nitrate of silver. He thinks the nitrate of silver kills the germs that cause the inflammation.

He believes that ice compresses are of value, applied from ten to twenty minutes every two hours, or, if possible, more frequently, "according to the vitality of the child," but if the cornea is involved, as above stated, hot applications must be used.

Proper nutrition, preferably mother's milk, and proper hygiene are important factors in aiding quick recovery from this serious inflammation.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, AUGUST 28, 1909

OLIVER WENDELL HOLMES

To-morrow, August 29, 1909, marks the hundredth anniversary of the birth of one whose name is probably more widely known than that of any other American physician. We refer to Oliver Wendell Holmes. The fact that the year 1809 saw the birth of four men of such varied genius as Gladstone, Tennyson, Darwin and Holmes has been frequently remarked. Dr. Holmes himself spoke of this circumstance in his "Hundred Days in Europe" in the following words: "It seems like an honor to have come into the world in such company, but it is more likely to provoke humility than vanity in a common mortal to find himself coeval with such illustrious personages"—a remark thoroughly characteristic of his breadth of spirit and not at all incompatible with the genial egotism appearing in many of his informal passages. The name of Dr. Holmes holds rather an unusual position in the annals of medicine and literature. There are great physicians who produced contributions to general literature, like Haller and Werlhof; and there are great writers who received a medical education, like Goldsmith and Keats; but the world has forgotten the literature of the former and the medicine of the latter. Dr. Holmes, however, belongs, with Sir Thomas Browne and "Rab's friend," to that small group who must be remembered both as devoted physicians and as lovable authors, because their writings are charged with personality, and the experience of their profession went to the upbuilding of that personality.

Moreover, while Dr. Holmes' lasting contributions to medicine are few, that he held a position of real influence in the medical thought of his day can not be doubted, as may be seen in the famous controversy concerning the contagiousness of puerperal fever. For forty years he was professor of anatomy at Harvard, keeping abreast of the progress of science to the end with all the enthusiasm of a young man; and yet he was the author of the exquisite lines of "The Chambered Nautilus." In this versatility, whose expression brought distinction in such widely varying fields, lies the most remarkable characteristic of his remarkable career.

It is perhaps of the genial "Autocrat" that we most often think when we hear the name of Oliver Wendell Holmes. The delightful humor and good sense of his philosophizings, his broad sympathy and charity toward all men, and his inexhaustible fund of anecdote and illustration have endeared him to us all, so that we turn back again and again to his "Breakfast Table" series to be cheered by his wit and to learn something of his fine charity.

The peculiar affection in which Dr. Holmes is held in medical circles is perhaps best explained by the fulness with which his life expressed the spirit that sang:

> A triple health to Friendship, Science, Art,
> From heads and hands that own a common heart!

THE FLY AND TYPHOID FEVER

The fly has from time immemorial been endured as a necessary scavenger. This it is, but a scavenger necessary only to those unaccustomed to reasonable and adequate cleanliness. While on the one hand the fly removes putrefying substances, on the other it distributes material at least as pathogenic—much tuberculous material, the virus of cholera, of tetanus, of trachoma, and of anthrax. It is certainly more than a coincidence that infant mortality is greatest in fly time. Milk is a very fair culture medium for bacteria, and amidst the uncleanliness obtaining in many families among the poor, it easily becomes contaminated with the excreta of flies and with the germs clinging to their feet. One fly was found thus to be the host for a hundred thousand fecal bacteria; "and it was on its way to the nearest milk pitcher." It is now generally agreed that the dysenteries and the diarrheas (except in the rare cases induced mechanically or nervously) are of microbic origin. Here the fly is surely implicated; especially since breast-fed infants almost never suffer the intestinal disorders which are deplorably frequent among the bottle-fed.

It is becoming manifest that the fly stands in a causative relation to typhoid fever. We have been accustomed to speak of typhoid as the autumnal fever. Counting back two months from the fall rise in typhoid mortality to the beginning of the fortnight's incubation, we come on the curve of prevalence of flies; the curve of high temperature most conducive to fly-breeding and activity; and also that of prevalence of diarrheal disease in both infant and adult. The time, then, when the fly is most active and numerous corresponds notably with the time when typhoid fever is contracted with unusual frequency. Many persons have come down with typhoid on returning to the city from their vacations, and tainted wells have generally been blamed; whereas, possibly in some cases the well has not been so blameworthy as the bluebottle.

The *Musca domestica* has not inaptly been termed the typhoid fly. Of course there are other means of contracting the disease than through this insect; but that it is a formidable agent can not be doubted. Its breeding-places are in the manure and refuse in and about stables; in the excrement of animals and human beings; in dust from dried urine and feces, and the discharges of "typhoid carriers;" in decaying vegetable matter, especially when congenial warmth and moisture coexist. Two hundred larvæ have been found in one inch of manure; ten days will suffice for the development of a brood; fifteen broods a season are possible; twelve flies surviving a winter may reproduce 40,000 during the following warm season. The fly's life is usually but a few weeks; but it may live dormant through the winter in closets and the warm parts of houses[1].

Felt[2] has found that this insect does not as a rule travel beyond three hundred to five hundred feet from its breeding-place; its habitat may indeed be close at hand—in spittoons, under the table, behind doors. It is, then, the part of wisdom to keep these insects from the sick-room, especially in contagious cases; to screen all doors and windows, especially in kitchen and dining-room; to cover or screen all food, particularly such as is uncooked, not only in homes, but also in hotels, provision stores and markets. Decaying material should not accumulate in or near a dwelling; fermentable refuse—bedding straw, waste paper, etc., which can not be burned or otherwise destroyed, should be covered with lime or kerosene oil; a modern sewage system, not leaking and not exposed, should be maintained; plumbing should be sanitary, filtration effective; kerosene should be poured into drains. Nuisances should be at once reported to health departments. Where there is no dirt and no filth there will be no flies. It is suggested[3] that the best and simplest fly-killer is a weak solution of formaldehyd in water (two drams to the pint); this should be put in saucers throughout the dwelling. Pyrethrum powder burned is also destructive of flies.

The typhoid bacillus may be carried from open drains, vaults and cesspools by flies, and then deposited by them on food and water; or the infection may be conveyed from open or box privies through underground drainage into wells, streams, small lakes and reservoirs visited by flies. Howard[4] would have large metal vessels used in rural districts; the excreta should be covered with earth, and the vessel should be emptied daily in a place where it is certain the drainage would not be dangerous. Manure should be put into tight pits or vaults without wire screens (which would be corroded by disinfectants); there should be an outer door from which the manure can be shoveled away. A barrel of chlorid of lime should be constantly at hand, from which each deposit of manure should be sprinkled.

Thus the breeding of flies may be prevented, but undoubtedly will not be until something like the same effort has been made to arouse public sentiment against the fly as against the mosquito. When by iteration and reiteration the chain of cause and effect that connects refuse, flies, and disease shall have become known to every one; when the housewife shall feel as much horror at finding a swarm of flies at her back door as she now feels at finding one in the parlor—then, perhaps, the day may come when scavenger flies will be as unknown in any self-respecting community as are now such scavenger dogs as those which constitute the street-cleaning force of Constantinople. Even if the extermination of the fly should not mean as much with relation to any one disease as the extermination of the anopheles has meant for malaria or the extinction of the calopus for yellow fever, in view of the number and variety of germs for which the fly is host, it is certain to mean an immense gain in general health.

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[1] Coward, F. A.: The Common House-Fly, THE JOURNAL A. M. A., June 5, 1909, lii, 1871.

[2] Felt, E. P.: The Control of Household Insects, Bull. New York State Education Dept.

[3] The Merchants' Association Committee on Pollution of the Waters of New York; Rules for Dealing with the Fly Nuisance.

[4] Howard, L. O.: House-Flies, U. S. Dept. of Agriculture, Bureau of Animal Industry.

THE TREATMENT OF NOCTURNAL ENURESIS WITH THYROID EXTRACT

Many causes have been assigned for the wetting of the bed at night by young and older children, but they have not led to any uniformly successful plan of treatment. In some instances, no doubt, the disorder may be traced to defective training, with the development of a vicious habit, but in many both provocative factor and remedial measure alike elude discovery. That the phenomenon may be due to some abnormality of internal secretion would appear to be shown by the interesting and instructive experience of Dr. Leonard Williams,[1] who records a series of 25 cases in which relief was afforded by the administration of small doses of thyroid extract. The suggestion was obtained from the case of a boy with nocturnal enuresis who instead of improving on removal of adenoids and tonsils became worse. Reasoning that the operation had deprived the child of a corrective internal secretion, Williams was led, on account of the intimate relations between the thyroid gland and the lymph glands, to try the therapeutic effect of thyroid extract. To use Dr. Williams' own words, "the effect was most dramatic." The enuresis ceased immediately and never recurred. Observations of a similar character had been previously made by a Belgian writer, Dr. Hertoghe, of Antwerp. It is important that the dose of thyroid extract employed be small—from ½ grain to 2½ grains thrice daily—as larger doses may defeat the purpose of the treatment, as was illustrated in one case in which enuresis previously absent developed in a boy to whom 2½ grains of thyroid extract were administered thrice daily for the correction of general debility following an attack of nephritis. The initial dose should be small, and it should be increased only if necessary, but no more should be administered than the minimum sufficient to effect the desired result. From the foregoing experiences it is argued that the thyroid secretion is a regulator of the action of the bladder and its sphincter, an excess being almost if not quite as deleterious as a deficiency.

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[1] Lancet, May 1, 1909, p. 1245.

SLEEPING SICKNESS

Sir Henry Hesketh Bell, Governor of the Uganda Protectorate, claims to have sleeping sickness under control in the region under his supervision. This feat was not accomplished, however, by any successful medical treatment. Professor Koch's work seems to have been unavailing, so far as finding any really curative method against the disease. The success was obtained by the most drastic measures. For several hundred miles along the shore of Lake Victoria, a strip two miles in width has been depopulated by order and the inhabitants removed inland. This was done by cooperation with the native chiefs, and the only people who remain within reach of the *Glossina* carrying the disease are the dwellers on a few islands from which it was not practicable to remove them. The mortality, which had ranged from 20,000 to 30,000 a year in the protectorate, fell during 1908 to less than 2,000, and the deaths occur now almost exclusively in the segregation camps; and it is believed that the new cases of infection are very few. The ultimate good result which is hoped for is that in a comparatively short time the disease will disappear from lack of sources of infection. Such a measure could only be carried out successfully with a docile population living under almost absolute authority, and constant vigilance will be required hereafter to hold the ground gained in the contest against the disease. It is not likely that so extensive a tract along the border of a navigable lake, the largest in Africa, can remain always unutilized, and the investigations into the cause and cure of sleeping sickness, the finding of the host of the protozoon, will have to be continued until some conclusive and valuable results are obtained. The sleeping sickness does not appear to exist along the shores of other African lakes, at least not to any such extent as has been the case in Uganda, which is an encouraging fact so far as the prospect of the complete success of Sir Henry Hesketh Bell's methods is concerned. Thus far certainly the outlook is encouraging.

ACUTE RHEUMATISM

Acute articular rheumatism or rheumatic fever was first described in the middle of the eighteenth century by Boerhaave, who was himself a sufferer from the disease. His description was subsequently elaborated by one of his pupils, van Swieten, in his commentaries on the aphorisms of his distinguished master. Sydenham was one of the earliest observers to recognize the affection, and he has given a most admirable account of it. For a long time the disorder was attributed to changes in the chemical constitution of the blood, but modern investigation appears to have demonstrated conclusively its bacterial origin. It is true that there are many forms of arthritis, whether affecting a single joint or many joints, and due to divers causes, but among these true rheumatism stands out as an acute specific, apparently self-limited disease, with well-defined clinical and pathologic characteristics. According to the view of Dr. Norman Moore,[1] who discusses the subject at considerable length in the Lumleian Lectures, the cardinal features of rheumatic fever are endocarditis and arthritis. The former he believes to be always present, in most instances causing permanent damage to one or more valves. He goes so far as to express the opinion that any disease attended with arthritis, but not with evidences of endocarditis, is not rheumatic fever. Accordingly, he proposes the term "heart fever" as the most appropriate designation for the disease. There may be in addition pericarditis or pleurisy. The distinguishing feature of the arthritis, as differentiated from other forms of joint inflammation, is the fact that complete recovery always ensues. The temperature curve is characterized by an initial rise, followed after a decline by occasional elevations, with intervals of normal temperature. Acute rheumatism is to be distinguished especially from ulcerative endocarditis and gonococcal arthritis. In cases of ulcerative endocarditis the joints usually escape, the temperature is high and oscillating, the disease is of protracted duration and recovery is rare. In cases of gonococcal arthritis evidences of endocarditis are generally wanting, while the lesions of the joints almost always leave permanent injury behind. Rheumatic fever, according to Moore, has an indefinite and variable duration, from two months to ten years or more, in accordance with the course of the attending endocarditis and the survival of the causative micro-organisms. Treatment consists mainly in protracted rest and the administration of some form of salicylic acid.

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[1] Lancet, April 24, May 1, 8, 1909.

Medical News

CALIFORNIA

Personal.—Dr. and Mrs. Peter A. Jordan, San Jose, have returned from Europe.——Dr. Antoinette M. Bennette, San Bernardino, has been appointed resident physician and superintendent of nurses at the county hospital.——Dr. Thomas G. Hesser, Folsom, was operated on for appendicitis at Wentworth Hospital, Sacramento, July 28.

Sanatorium Dedicated.—The White Crusaders' Sanatorium for the Treatment of Patients Afflicted with Incipient Tuberculosis was dedicated July 16, at Alta. The site consists of 90 acres of wooded hillsides at an altitude of 3,600 feet, about one mile from Alta. The colony consists of eight buildings, grouped about the central sanatorium. In this building will be the dining-room, kitchen and general assembly room, and home of the resident physician. The sanatorium will accommodate thirty patients.

ILLINOIS

Chicago

Personal.—Dr. S. Josephine McCollum, recent medical superintendent and for ten years anesthetist at Mary Thompson Hospital, has withdrawn, entered private practice, and will make anesthetics a specialty.

KENTUCKY

Proclamation.—The State Board of Health has issued a proclamation setting forth that 39.1 per cent. of 119 samples of specimens of milk supplied to the city of Louisville examined are tubercular; showing that infectious and contagious diseases exist among cows producing milk for sale in Kentucky; announcing the existence of infectious and contagious diseases in the counties of the state, and giving rules for the prevention of the spread of these diseases and the protection of the health of the state. These rules provide that persons owning or controlling cows shall submit such cows to the tuberculin test; that no milk shall be sold in the state unless the cows producing same show a negative reaction to tuberculin; that all cows found to be infected with tuberculosis shall be destroyed at the cost of the owner; that all local boards through the state, the inspectors of the Bureau of Animal Industry of the

United States, and officers of the commonwealth shall cooperate with the officers of this board in this regard; that no cows such as are brought for immediate slaughter shall be allowed to enter the state unless they have shown negative reaction to tuberculin and have been inspected by the officers of the board.

MARYLAND

Hospital News.—The Polyclinic Dispensary will be opened in a short time on East Baltimore street. Dr. Leonard K. Hirshberg is chief of clinic and Drs. Newdigate M. Owensby, Claude A. Stonecipher, E. G. Linthicum, George W. DeHoff, Samuel Kahn, Henry H. Flood and Thomas H. Magness are his associates.——The Board of Estimates has appropriated $137,000 for improvements at Bayview Hospital. A wing will be erected to cost $87,000, making room for 150 additional beds, which will allow all patients to be in the hospital and empty the tunnel. This will also separate the insane from the indigent inmates.

Personal.—Dr. William K. White underwent an operation at University Hospital, August 5.——Dr. James M. H. Rowland has been elected chairman of the Democratic Advisory Committee of 120, which was appointed by the Democratic State Central Committee to manage the campaign next fall.——Dr. Percy Millard Dawson, associate professor of physiology in Johns Hopkins Medical School, has resigned.——Dr. Anton Dilger of the faculty of Heidelberg University is inspecting the hospitals of Baltimore.——Dr. Aristide Giampietro has been appointed physiologist in the Bureau of Plant Industries of the United States Department of Agriculture.

Baltimore

Personal.—Dr. Theodore Cooke, Jr., has been elected president of the National Prison Physician's Association which met recently in Seattle.——Dr. John Doyle, a resident physician at Mercy Hospital, was operated on for appendicitis in that institution, August 20.——Dr. William Henry Smith suffered a fracture of the fibula in a game of ball between the resident physicians and non-resident physicians of University Hospital, August 20.——Dr. Walter V. S. Levy, pathologist to University Hospital, has accepted a similar appointment to the Freedman's Hospital, Washington, D. C.——Dr. Matthew James McKinnon, of York, Pa., one of the oldest graduates of the University of Maryland, while on a visit to his daughter near Baltimore, was seized with a critical illness of the stomach.

MINNESOTA

New Hospital.—Drs. Archa E. Wilcox, Charles G. Weston and John Warren Little have had plans drawn for a hospital at Harriet and Franklin avenues, Minneapolis, to accommodate thirty-four patients.

Personal.—Dr. Edward W. Buckley, St. Paul, has been elected national physician of the Knights of Columbus.——Dr. Herbert O. Collins has been elected city physician of Minneapolis.——Dr. Wilcox has been appointed a member of the standing committee to take care of the Hopewell Hospital.

County Society Meeting.—The forty-first annual session of Wabasha County Medical Society was held at Wabasha, July 8, when Dr. Henry T. McGuigan, Mazeppa, was elected president; Dr. Joseph F. Bond, Wabasha, vice-president; Dr. William F. Wilson, Lake City, secretary and treasurer; Dr. Jesse A. Slocumb, Plainview, delegate to the state association; Dr. John P. Dougherty, Wabasha, alternate, and Dr. D. P. Dempsey, Kellogg, censor.

MONTANA

Smallpox Quarantine Abolished.—At a meeting of the State Board of Health, July 10, resolutions were adopted abolishing quarantine regulation of smallpox for the following reasons: Vaccination, properly performed and repeated at intervals, is an absolute preventative. The care of cases is a heavy expense on the counties. Properly vaccinated persons can not become a care on the counties.

Medical Board's Decision Affirmed.—A jury composed of Drs. Napoleon J. Salvail, Louis H. Fligman, Charles S. W. Thompson, all of Helena; McCabe, Oscar M. Lanstrum, Helena, and Max Barbour, heard an appeal in the District Court in the matter of the application of W. R. Smith, Roundup, to the State Board of Medical Examiners, for a certificate to practice. The jury returned a verdict sustaining the board and finding the defendant was not entitled to practice medicine in the state.

NEVADA

Hospital News.—At the meeting of the Goldfield Mine Owners' Association, Dr. Eugene A. Wheeler, formerly in charge of the Miners' Union Hospital, was selected to take charge of St. Mary's Hospital, succeeding Drs. D. Ashley Turner and Ora Burton Dunham.

New Laboratory.—Under the law creating a State Hygienic Laboratory at the University of Nevada and providing a bacteriologist for the diagnosis of infectious diseases for the physicians and health officers of the state and for research into the natural causes and control of such diseases, Dr. W. B. Mack has been appointed director of the laboratory.

Personal.—Dr. Francis C. Pache, Mina, was recently operated on in San Francisco for appendicitis.——Drs. Archibald L. Rice, Mack and John A. Lewis have been appointed members of the Board of Health of Reno.

NEW JERSEY

July Mortality.—During the month ended July 15, there were 2,606 deaths reported to the Bureau of Vital Statistics. It is noticeable that there is a decrease in the deaths from infantile diarrhea, measles, scarlet fever and diphtheria; cancer, infantile diarrhea, measles, scarlet fever and diphtheria, but an increase in cancer, cerebrospinal meningitis and nephritis.

Personal.—Dr. George H. Baker, Long Branch, is critically ill with cerebral hemorrhage.——Dr. Richard C. Barrington, Mount Holly, has succeeded Dr. J. W. Branin as a member and secretary of the State Board of Medical Examiners.——Dr. William F. Ridgway has succeeded Dr. J. Addison Joy as chief of the medical staff of the Atlantic City Hospital, and Dr. Samuel Barbash has been appointed chief of the dispensary work.

NEW YORK

New York City

Post-Graduate Hospital Acquires Property.—The New York Post-Graduate Hospital is to erect an annex to the hospital on property recently purchased by them for that purpose on Twentieth and Twenty-first streets.

Personal.—Dr. and Mrs. George L. Brodhead, Dr. and Mrs. Ferdinand C. Valentine, and Drs. Arthur S. Vosburgh, Charles S. Barnes, and Fred H. Albee have sailed for Europe.——Dr. Gordon Lindsay was recently assaulted and robbed of $200 on Twenty-sixth street and Second avenue.

OHIO

License Is Revoked.—The State Medical Board is said to have revoked the license of Dr. James M. Earnest, Alliance, June 30, and the license of Dr. J. G. Colton, Cleveland, July 6.

Election.—At the annual meeting of the Columbus Southside Physicians' Association, July 23, Dr. John Rauschkolb was elected president; Dr. Charles D. Dennis, vice-president; Dr. Harry Pershing, secretary, and Dr. Everett T. Tidd, treasurer.

Taken to Prison.—Dr. Norman M. Geer, Cleveland, said to have been five times indicted, thrice tried and twice convicted for performing illegal operations, who was refused motion for a new trial July 24, was taken to the State Penitentiary, Columbus, to serve his term of four years.

Illegal Practitioner Convicted.—Alba Dalka, Broken Branch, an Indian "herb doctor" of Tiffin, charged with the illegal practice of medicine, is said to have pleaded guilty and to have been sentenced to pay a fine of $25 and costs and to be imprisoned for sixty days in the county jail.

New Tuberculosis Hospitals.—A tuberculosis sanatorium to cost $50,000 is to be erected on the site purchased in McBeath Park, Lima, by Auglaize, Mercer, Van Wert and Allen counties, under the law recently passed by the legislature.——Preble and Montgomery counties have united in the acquisition of Brookside Sanatorium, which was opened August 2 with 14 patients.

Cincinnati

Personal.—Dr. Paul Gerhardt Wooley, professor of pathology in the University of Nebraska, has accepted the position of professor of pathology, and Dr. William B. Wherry, of the United States Public Health and Marine-Hospital Service, has accepted the position of assistant professor of bacteriology in the Ohio Miami Medical College, the Medical Department of the University of Cincinnati. Dr. Wooley will be pathologist and Dr. Wherry bacteriologist to the Cincinnati Hospital.

OKLAHOMA

Not in Good Standing.—The State Medical Board announced, July 15, that the Epworth Medical School of Oklahoma City is not in good standing, and that its diplomas will not be recognized in the future unless the requirements of the board are met.

Personal.—Dr. Robert E. Looney, Oklahoma City, has been appointed temporary city physician during the absence of Dr. William M. Hubbard.——Dr. William P. Fread, Enid, who sustained a fracture of the left leg in a runaway accident, has recovered.——Dr. Marcus H. Heldman, assistant city physician of Oklahoma City, has resigned.

Licenses Revoked.—The licenses of J. P. Norvell, Weleetka; James F. Lee, Eldorado; John Lindsay, Shady Point; Homer L. Wilson, Woodward, and W. A. Clark, Hitchcock, are said to have been revoked by the State Medical Board on the ground that they were not graduates of recognized medical schools, and were, therefore, illegally registered.

Hospital News.—The Duke and Rucks Sanatorium for Mental and Nervous Diseases, Guthrie, will hereafter be under the sole control of Dr. John W. Duke.——The Oklahoma Baptist Hospital, Muskogee, was formally opened for the reception of patients August 10. The institution is under the control of a board of trustees and is open to all reputable physicians.——The Ladies' Hospital Association, Muskogee, will begin immediately the erection of a forty-room hospital.——Shawnee recently voted $20,000 in bonds for the erection of a municpal hospital at that place.

PENNSYLVANIA

Personal.—Dr. Andrew S. Stayer, Altoona, has been reappointed surgeon-in-chief of the National Guard of Pennsylvania, with the rank of lieutenant-colonel.——A memorial tablet to Dr. Nathaniel Bedford, the first physician in Pittsburg, was placed on his tomb in Trinity Churchyard recently by the Daughters of the American Revolution.

Officers Elected.—At the annual meeting of the Lehigh Valley Medical Association, held at Delaware Water Gap, July 22, the following officers were elected: President, Dr. Obadiah H. Sproul, Flemington, N. J.; vice-presidents, Drs. Jonathan M. Wainwright, Scranton, and William E. Gregory, Stroudsburg; secretary, Dr. Clinton J. Kistler, Lehighton; treasurer, Dr. Albert A. Seem, Bangor.

Lodge Practice Condemned.—At the regular meeting of the Dauphin County Medical Society held in Harrisburg, August 17, a resolution was adopted requiring the expulsion of all members of the society who act as physicians for fraternal or beneficial orders under contract to treat members of such orders and their families at a fixed yearly rate, or who consult with physicians who engage in lodge or contract practice.

New Hospital Staff.—The new staff of St. Francis' Hospital, Pittsburg, is made up as follows: Medicine—Drs. Thomas G. Simonton, Ernest W. Willetts, Benson A. Cohoe and Howard G. Schleiter; surgery—Dr. Miller; [illegible] R. Huggins; diseases of children—Dr [illegible] Jr.; *x*-ray and skin diseases—Dr. Russell H. Boggs; ophthalmology—Dr. Edward A. Weisser; otology, rhinology and laryngology—Drs. Chevalier Q. Jackson and Edith T. Waldie; pathology—Dr. Ernest W. Willetts; and neurology—Dr. Thomas M. T. McKennan, Theodore Diller and W. Walker.

Medical Camp of Instruction.—The War Department designated the following members of the National Guard of Pennsylvania to attend the recent medical camp of instruction for officers at Antietam, Md.: Dr. Joseph K. Weaver, Norristown, colonel and surgeon-general; Drs. George H. Halberstadt, Pottsville, William J. Ashenfelter, Pottstown, Charles C. Wiley, Pittsburg, Morris F. Cawley, Allentown, Charles S. Turnbull, Philadelphia, William E. Keller, Scranton, Robert G. H. Hayes, Bellefonte, Benedict S. Ralston, Pittsburg, G. S. Crampton and Harlan Shoemaker, Philadelphia, majors and surgeons; Drs. P. Francis Gunster, Scranton, and M. Toland Sime, Philadelphia, captains and assistant surgeons; Drs. Edward M. Hand, Coraopolis, James F. Edwards, Pittsburg, Henry H. Doan, Philadelphia, Frederick A. Hartung, Pittsburg, Frederick O. Waage, Philadelphia, Robert S. McKee, Newhaven, William J. Crookston, Pittsburg, and John I. Robinson, State College, lieutenants and assistant surgeons.

Philadelphia

Hospital Buys Property.—The officials of Pennsylvania Hospital have purchased for $70,000 the property at 724 Spruce street. The building is occupied at present by the Women's Southern Homeopathic Hospital, which plans to erect a $150,000 new hospital at Broad and Fitzwater streets.

Wills Hospital Addition.—Plans have been prepared for the enlargement and improvement of Wills Eye Hospital. Beside interior changes to the present building, there will be an addition of three stories and basement, 80 by 32 feet.

Bequests.—By the will of the late Harry S. Henry, his entire estate, which is said to amount to $1,500,000, will revert on the death of the widow and his two sisters, to five local hospitals for establishment of beds for the treatment of white children.——The late Gustave Berntz bequeathed $500 to the German Hospital, and the late Elizabeth McGarvey $300 to the Presbyterian Home.

Personal.—Dr. David Braden Kyle has returned from Europe.——Dr. Andrew B. Kirkpatrick sailed for Europe August 14.——Dr. John H. Musser has gone to Europe to attend the International Medical Congress in Budapest. He is chairman of the American committee.——Drs. Luther C. Peter, Carle Lee Felt and H. Brooker Mills have resigned from the staff of the Northwestern General Hospital.——Dr. H. M. Goddard has returned from Europe.

Appeal for Epileptic Clinic.—A letter of appeal has been sent throughout the city asking for funds for the establishment of a clinic and an employment bureau for persons suffering with epilepsy. The clinic is to be known as the Letchworth Clinic for the Home Treatment of Epileptics. It is also aimed to start an employment bureau to be known as the Society for Securing of Suitable Employment for Epileptics, in order that persons suffering with that malady may be enabled to secure work without danger to themselves or their fellow-workmen.

RHODE ISLAND

Bequests.—By the will of Mrs. Henry G. Russell, Providence, $150,000 is devised to the Rhode Island Hospital, and $25,000 to Butler Hospital.——The will of Capt. Ira Winsor bequeaths $3,000 to the Rhode Island Hospital.

Personal.—Brown University has conferred the degree of D.Sc. on Dr. Charles V. Chapin, superintendent of public health of Providence.——Dr. John Howard Morgan, Westerly, has been elected a member of the board of censors of the Rhode Island Medicolegal Society.——Dr. William C. Monroe, health officer of Woonsocket, and trustee of the state sanatorium for tuberculosis of Wallum Lake, has started for Europe.——Dr. William R. Morse, Providence, has decided to enter the medical mission field in China.——Dr. Charles A. Sylvia has been appointed vice consul of Portugal at Providence

TENNESSEE

Medical School Closed.—The trustees of the University of the South decided that the medical department should be discontinued after commencement exercises, October 28. The hospital will continue in operation in charge of Dr. Allen Lawrence Lear.

Hospital Plans.—Plans for the Baptist Memorial Hospital, Memphis, are rapidly nearing completion and the fund for the hospital is rapidly growing.——The present home of the University of Tennessee, medical department, is to be converted into a hospital to be used for both schools, until the building proposed on College Hill can be erected.

Personal.—Drs. E. D. Watson and Walter S. Lawrence have been appointed Roentgenologists to the Memphis City Hospital.——Dr. Albert G. Kern has been elected physician of the Tennessee Deaf and Dumb School, Knoxville, vice Dr. John M. Boyd, deceased.——Dr. and Mrs. Winston T. Michie, Memphis, have sailed for Europe.——Dr. William L. Dudley, Nashville, has returned from abroad.

Medical Officers for Encampment.—The adjutant general has announced the following appointments of medical officers for state encampment: First regiment, encampment at Waverly, Captains R. B. Underwood and J. M. Troutt, Lieutenant Morris Hartman. Third regiment, encampment at Knoxville, Major James R. Nankivill and Captains A. G. Kyle, John Overton and S. L. Wadley. State rifle competition, Knoxville, Captains Larkin Smith and William E. Cooper.

VIRGINIA

Virginia Military Surgeons in Camp.—The following medical officers of the Virginia National Guard have been in attendance at the school of instruction at Antietam, Md.: Lieut.-Col. Junius F. Lynch, Norfolk; Major Lawrence T. Price, Richmond; Captains Adam T. Finch, Chase City; J. Fulmer Bright, Richmond; F. K. Travers Warrick, Richmond; Israel Brown, Norfolk; Harry B. Wall, Norfolk; and Collins.

WASHINGTON

New Hospital Being Built.—Dr. Emilion O. Houda, Centralia, is erecting a private hospital at that place with a capacity for fifteen beds.

Personal.—Dr. Alfred Ernest Braden, Tacoma, has been selected to fill the newly created position of city school physician of that place.

GENERAL NEWS AND COMMENT

Warning Concerning Agent.—Dr. William J. Thompson, Portage, Wis., writes that a man giving his name as George V. Smiles, or George Van Sands, and presenting a card of the American Claim Buyers' Union, 306 Hodges Building, Detroit —a firm which was not found at the address given—has been held to the Circuit Court at Portage for the alleged attempt to obtain money under false pretenses. Dr. Thompson asks us to announce this in THE JOURNAL. He says that the man is also wanted on two warrants at Janesville, Wis.

Federal Laboratories Will Furnish Plague Specimens to Colleges.—Surgeon-General Wyman announces that the Federal Laboratory of the Public Health and Marine-Hospital Service in San Francisco, Cal., will furnish to medical colleges and medical museums requesting them tissues illustrating the lesions of plague in guinea-pigs, and when practicable in other rodents, as well as stained slides showing the organism of plague as it is found in tissues from infected persons or rodents. By availing themselves of this offer, medical colleges should be able by means of safe specimens to demonstrate to their students the lesions of plague, and thus give practical instruction regarding a disease which is of great practical interest at the present time.

CANADA

Work of Tuberculosis Sanatorium.—The building for the Nova Scotia Sanatorium for Tuberculosis was completed in 1904, is situated on sixteen acres of land at Kentville, and cost $20,000. From June 1, 1904, to June 1, 1909, there have been admitted 298 patients to the institution. Of this number, 245 are available for classification, 73 being incipient cases, 93 advanced with favorable symptoms, and 79 far advanced. The conditions on discharge were as follows: 52 apparently cured, 123 improved, and 70 not improved. There were 60 per cent. of apparent cures in the incipient cases. Patients to this institution are admitted on the examination of either of two medical examiners residing in Halifax, the maintenance rate now being $5.00 per week. The institution is under the control of the government of Nova Scotia. The medical profession are advocating a resident physician.

Medical Societies Meet.—The annual meeting of the New Brunswick Medical Society was held in St. John, July 20 and 21, under the presidency of Dr. John R. McIntosh, St. John. The following officers were elected: President, Dr. H. A. Murray, Fredericton Junction; vice-presidents, Drs. Clinton T. Purdy, Moncton, and George G. Melvin, St. John; corresponding secretary, Dr. John S. Bentley, St. John; recording secretary, Dr. George G. Corbet, St. John, and treasurer, Dr. Daniel E. Berryman.——The fifty-sixth annual meeting of the Medical Society of Nova Scotia was held in Sidney, July 7 and 8, under the presidency of Dr. Arthur S. Kendall, Sidney. The subject of a laboratory and bureau of public health came up for discussion, on the report of the com[illegible] garding the communication of Dr. Arthur [illegible] ton, asking that a resolution be passed calling for a sub-laboratory for scientific and sociologic study of criminals, etc. The meeting unanimously adopted a resolution asking that the Dominion Government establish a central bureau of public health. A committee was appointed to report on affiliation with the Canadian Medical Association.

FOREIGN

Five Hundredth Anniversary of University of Leipsic.—The University of Leipsic celebrated, July 29, its quincentenary. It was founded as an offshoot of the Prague university and for centuries took the lead in medical science, and in some respects it still maintains its supremacy. In recent years the names of His, Wunderlich, Thiersch and Credé are familiar to all, and the organization of the medical profession in Germany was first effected there in the foundation of the *Aerztevereinsbund*. The organization that protects the economic interests of German physicians—the well known *Leipziger Verband*—owes its origin also to a Leipsic physician, Dr. H. Hartmann, who is still at its head. The celebration of the quincentenary was most impressive, fully sixty universities around the world having sent representatives, and thousands of students, alumni and guests gathered in the great coliseum built for the occasion. One feature of the celebration was the historic procession representing the various periods in the life of the university, the students in historic garb. An elaborate banquet was tendered by the state to one thousand guests. Among the honorary degrees conferred was one on ex-President Roosevelt, and four other Americans were thus honored: Professor Michelson, the physicist; Professors Loeb and Wilson, the biologists, and Professor Burgess, the publicist. Our current German exchanges contain numerous historical articles depicting the evolution of the medical faculty and medical science in general at the university. The old reputation of the university as one of the two or three recognized centers of scholarship in the world is still maintained by the present faculty, which includes Curschmann, Trendelenburg, Hering, Flechsig and Rabl. The university of Leipsic has the most handsomely endowed chair of the history of medicine in the world, the Puschmann endowment, of which K. Sudhoff is the incumbent. Leipsic is the center of the German book trade, and large numbers of scientific periodicals are published there.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug. 14, 1909.

Bursting of an Aneurism Declared to Be An Accident

A case which has just been decided, again shows the difficulties which the recent Workmen's Compensation Act involves and the extraordinary extent to which the term "accident" has been stretched. A workman had a large aortic aneurism which was liable to burst at any moment. While tightening a nut with a spanner, but not using more than ordinary force the aneurism ruptured and he fell dead. The case went into court and the judge held that death was the result of accident within the meaning of the act and gave compensation accordingly. The case was then taken to the court of appeals and the appeal was dismissed. The court held that the man, admittedly suffering from aneurism, had incurred a strain of a not extraordinary character during his work, which ruptured the aneurism. Therefore the case came within the law as laid down by recent decisions. But such cases have a result the very opposite of that intended by the framers of the act, which was intended to benefit workmen regardless of all other interests, and was passed in the present House of Commons by a government actuated by strong humanitarian motives and constantly importuned by a powerful and greatly increased labor party. Employers insure their workmen against the liabilities of the act. Insurance companies refuse to accept men with any physical defect or disease, however slight, which increases the chance of accident, and these are consequently refused employment. The result is that many men suffering from some slight defect which in no way interferes with their capacity for work are unable to obtain employment.

Pharmacists Object to Physicians Dispensing

It is a standing grievance with the medical profession that pharmacists not only dispense physicians' prescriptions, but do a large amount of what is termed "counter prescribing," generally for minor maladies, but sometimes inadvertently for serious ones. On the other hand the pharmacists consider it a grievance that the majority of the physicians in England dispense their own medicines. The only ones who do not are the consultants and the very small number of general practitioners whose clientèle is almost entirely wealthy. At the annual meeting of the British Pharmaceutical Conference, which has been held at Newcastle-on-Tyne, the president, Mr. J. F. Tocher, opened a discussion on the subject, "Should the Dispensing of Medical Prescriptions Be Confined to Pharmacists?" He said that the great grievance of pharmacists was that they were the only class specially educated and properly trained to prepare and dispense medicine, and as such, many of them got little if any employment in this kind of work because it was done by the medical profession. The total transference of the dispensing of prescriptions from physicians to pharmacists would in his opinion be advantageous to the medical man, the pharmacist and the public. He proposed to institute a joint standing committee, consisting of members of the British Pharmaceutical Conference and of the British Medical Association. Later if practicable, interested members of the public, including leaders of friendly societies, might be added. The duties of this committee would be to collect information on the actual practice with respect to dispensing and to the facilities for transference of the work to pharmacists in the cases in which the work was done by physicians. A number of local physicians took part in the discussion and a resolution to the above effect was carried. A discussion on this subject took place a few years ago in the columns of the *Lancet* and it was shown that it would be a great advantage in many ways if physicians were relieved of the work of dispensing. The profession would gain in dignity and would have more time to devote to its proper work, the treatment of the sick, and also more leisure. But in poor and club practice there would be a marked increase of expense which it would be difficult to transfer to the patients. It is very unlikely that the present system will be abolished. Moreover, the claim of pharmacists that they are the only persons trained to dispense medicines is not correct. Every medical student has now to go through a course in pharmacy.

Carbon Tetrachlorid for Shampooing

In a previous letter (The Journal, July 31, p. 392) I reported the case of a young woman who died while her hair was being shampooed with tetrachlorid of carbon. The view that the shampoo is not quite so harmless as has been thought is confirmed by an article contributed to the *Lancet* of August 7 by Dr. A. D. Waller, director of the physiologic laboratory of the University of London, with an added note by V. H. Veley, D.Sc., F.R.S., a distinguished chemist. Dr. Waller has investigated the toxicity of various drugs by means of their action on isolated muscle. He finds that the toxicity of a molecule of chloroform is 100 times greater than that of a molecule of alcohol. Carbon tetrachlorid he finds more toxic than chloroform and the incriminated hair shampoo (which contains in addition, impurities, of which the most important is carbon bisulphid to the extent of 1.5 per cent.) still more toxic. Dr. Veley considers that the bisulphid is so intensely poisonous that even in this small percentage it increases the toxicity of the shampoo. He further points out that as carbon tetrachlorid is very heavy (5.3 times as heavy as air), notwithstanding any fanning the vapor, which is considerably more toxic than chloroform, must fall over the face of the person shampooed. He thinks that legislation is called for to prohibit the use of carbon tetrachlorid in hair-dressing.

Munificent Bequest for Cancer Patients

If the cancer problem is not solved it will not be for want of funds. The latest sum to be devoted to the disease is the munificent one of $1,250,000, which was left by the late Mr. Harry Barnato for the purpose of founding some charity in commemoration of his brother, Mr. Barney Barnato, and his nephew, Mr. Woolf Joel. After considering many schemes the trustees have decided to apply the money to the building and endowment of an institution for the reception of cancer patients. To increase the potentialities of the bequest the institution will be administered in connection with the Middlesex Hospital, the only general hospital in London which has special wards for cancer patients and special laboratories devoted to investigation of the disease. A site has been acquired adjoining the hospital's cancer wards. The advantages of the trustees cooperating with the hospital are considerable. The cost of organizing the new undertaking will be greatly diminished and they will have the guidance—administrative and medical—of those whose experience of the disease is exceptional. The trustees intend to devote $10,000 to the erection of research laboratories of a character calculated to induce men of the highest skill to work in them.

A Woman Member of the Royal College of Physicians

For the first time in its history the Royal College of Physicians has admitted to its membership a woman, Miss Ivy E. Woodward, M.D. Lond. The ordinary qualifications granted by the college is the license which is associated with the familiar letters L.R.C.P., but the distinction now obtained is the M.R.C.P., the highest diploma obtainable by examination at the college, which is possessed by, and is the hall-mark of, consulting physicians.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Aug. 11, 1909.

The Bureaus of Hygiene

According to the law of 1902, each city of more than 20,000 inhabitants is to have a bureau of hygiene with authority to take sanitary measures and to oversee their execution throughout the commune. But sixteen of the most important communes of the Department of the Seine have protested against the change in organization required by the law, both on account of the expense, and also because they are obliged to put a physician at the head of each bureau. The mayors of these communes say that they can not dismiss the non-medical officials who have hitherto directed the bureaus. The prefect of police thought that he might compromise by merely exacting that each director who did not have a medical degree should be assisted by a physician. The Council on Hygiene has just refused to sanction a compromise by which physicians should work in bureaus of hygiene under the orders of non-medical directors

Increase in Medical Fees

The medical society of the fourth ward (arrondissement) of Paris having recently taken up the question of the increase of medical fees (The Journal, July 10, 1909, p. 126), a mixed commission, composed of representatives of the medical societies of the Department of the Seine, of Paris and of the wards of Paris was formed to study this question. This commission has just decided that it is necessary (1) to increase medical fees by at least a third over current rates for ordinary visits and consultations, each ward making the minimum rates that are suitable for it; (2) to ask higher rates for urgent, evening and Sunday visits; and (3) to establish a minimum scale for the special procedures of current practice.

The Congress of Alienists and Neurologists

The nineteenth Congress of Alienists and Neurologists of France and of French-speaking countries has just been held at Nantes, August 2 to 8. Among the questions discussed, which I have already mentioned in a preceding letter (The Journal, June 19, 1909, lii, 2006) that of insanity in the army from the clinical and medicolegal point of view, assumed special importance. The ministry of war had sent a special delegate, Dr. Simonin, professor at the school of military hygiene at Val-de-Grace. It was the first time that the military administration had been represented at the Congress of Alienists and Neurologists. Numerous magistrates were also present. The president of the congress, Dr. Vallon, chief physician of the Ste. Anne Asylum at Paris, congratulated himself on the increasing interest among legists in the problems of medicolegal psychiatry.

According to the report of Dr. Granjux of Paris, there are annually invalided 0.6 per thousand of the effective military force for "mental alienation, idiocy and general paralysis." In this reckoning those who are invalided for hysteria, epilepsy, neurasthenia and alcoholism are not included; if the latter are added the percentage is 1.8 per thousand; and even this is far too low to represent the actual proportion of the insane, for insanity is often not recognized. The French army, however, is not in a comparatively bad state in this respect. The number of the insane is, it is true, somewhat less in the German army, but it is even a little larger in other armies having general military service, and very much larger in the countries where military service is not general, such as Great Britain, Belgium, etc.

After the discussion of the reports of Dr. Granjux, and of Dr. Rayneau of Orleans, the congress passed resolutions looking toward the strengthening of the army and navy medical corps on the side of psychiatry and the collection of better statistics on insanity.

The congress will meet in 1910 in Brussels and Liège under the presidency of Drs. Crocq of Brussels and Klippel of Paris. The subjects of discussion will be: (1) sleeping sickness and narcolepsy; (2) the classification of cutaneous lesions in nervous maladies; (3) alcoholism from the criminologic point of view.

The French Association for Advancement of Science

The thirty-eighth session of the French Association for the Advancement of Science was held August 2 to 7 at Lille under the presidency of Professor Landouzy, dean of the College of Medicine of Paris. M. Henri Poincaré of the French Academy and the Academy of Sciences was awarded the large gold medal of the association, which last year was awarded to the illustrious English savant, Sir William Ramsay.

The section of medicine, presided over by Professor H. Roger of Paris, discussed questions of practical interest, such as the new methods of diagnosis and treatment of tuberculosis, recent contributions to the subject of epidemic cerebrospinal meningitis, etc.

In the section of medical electricity, which brought together a great many members, a large place was naturally given to radiography. A paper by Dr. A. Imbert, professor of medical physics at the College of Medicine of Montpellier, on errors of interpretation in radiography and a paper on the same subject presented by Drs. A. Mouchet and Lamy of Paris, aroused great discussion. A great number of papers were devoted to the treatment of arteriosclerosis by high frequency currents. Dr. Lejars, professor *agrégé* at the College of Medicine of Paris, presented a question of great practical interest, namely, the indications for use of electricity in ileus.

Next year the association will meet at Toulouse under the presidency of Dr. C.-M. Gariel, professor of medical physics at the College of Medicine of Paris.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Aug. 4, 1909.

The Incidence of Infectious Diseases in Prussia

According to the ministerial report on the health of Prussia in 1907, which I have already mentioned, there was a considerable increase in the mortality from influenza. There died of influenza in Prussia 5,512, that is, 0.145 per thousand living and 0.81 per hundred deaths. The largest previous influenza mortality occurred in 1892, during the great influenza pandemic, when about 16,000 or 0.523 per thousand living died in Prussia. The three winter months, January, February and March, in 1907, especially February, had the highest mortality; September the lowest. The deaths according to ages were as follows: Infants, 351; children 1 to 15 years old, 354; between the ages of 15 and 60, 1,395, and over 60, 3,412. The number of cases of typhoid continually decreases in Prussia, dropping from 4,410 cases in 1901 to only 2,168 in 1907. The typhoid mortality is declining still more rapidly, from 0.264 per thousand living in 1887 to only 0.057 in 1907. The largest number of deaths according to age occurs between 30 and 40; the highest relative mortality between the ages of 20 and 25. The morbidity was highest during the summer months. In most cases the diagnosis was confirmed bacteriologically. The government laboratories have also in many cases discovered bacillus-carriers; for example, in a village parsonage in which cases of typhoid continually occurred, while the rest of the village remained free, it was discovered that the pastor's mother had typhoid bacilli in her stools; she had had a severe attack of typhoid thirty-seven years before. Among the customers of a city milkdealer cases of typhoid continually occurred, and a maidservant in the village from which the dealer obtained his milk was discovered to be a bacillus-carrier. The spread of typhoid generally occurred through conveyance from person to person; also through infected water, through milk from dairies, and through other foodstuffs; a few times through the washing of the clothes of a typhoid patient. There were 57 cases of paratyphoid reported, 7 of spotted fever, and 3 of relapsing fever. There were 185 deaths from dysentery. Malaria seldom occurs. Trachoma is still prevalent, especially in the east of our country. In the district of Königsberg there were 1,872 trachomatous school children reported in 1907; in the district of Dantzig, 2,000; in the district of Posen, 3,800. There were 2,591 cases of epidemic cerebrospinal meningitis with 1,613 deaths, or 62.47 per cent.; the largest relative number of cases occurred in April. Only 142 cases of smallpox were reported during the whole year. There were 338 cases of traumatic tetanus, the mortality being about 75 per cent. The patients treated for gonorrhea in the general hospitals numbered 20,000, and for syphilis and soft chancre, 22,000. There were 3,771 mothers who died of puerperal fever, or 2.942 per thousand parturients. The diphtheria mortality has continued to decline during the last decade; in 1898, 18,147, or 0.556 per thousand living, died; in 1907, only 9,307 died; that is, 0.246 per thousand living.

Death of Professor Runge

A few weeks after the death of Pfannenstiel, German gynecology suffered another heavy loss in the death of the director of the Göttingen gynecologic clinic, Prof. M. Runge. He died in Berlin, aged 59, following an operation for kidney disease. Runge began his academic career as assistant to Leyden in Strasburg, his gynecologic work as assistant to Gusserow in Berlin. Before his professorship at Göttingen, in 1883, he was called to Dorpat as ordinarius, and in 1888 he, like all the other German professors, left the Russianized and ruined university. Aside from his numerous scientific works, Runge was best known by his text-books on obstetrics and gynecology, and as the author of the official manual for midwives now in use in Prussia.

VIENNA LETTER

(From Our Regular Correspondent)

Vienna, Aug. 9, 1909.

The Health of Potters

A series of investigations into the health of certain classes of the population has been instituted by Chyzer and reported to the board of health. The occupation of the pottery makers requires the presence of lead in the inhabited places, and as in this country there are many potteries in dwelling-houses where even young children are employed, the danger to health is great. Thus in some instances the dust collected from these houses contained up to 14 per cent. of lead. Constant human lead-poisoning is often observed among them; the household animals also fall victims to the occupation of their masters. Fowls and ducks can not thrive in the vicinity of potteries; dogs and swine are killed by drinking water polluted with the lead-containing waste of the process, and cats are especially susceptible. The latter animals often show colic, loss of flesh and nervous disturbances, with terminal paralysis. As a rule, all household potters are attacked at least once before having completed their third year at this occupation, and many patients had been five or six times in the hospital. It is not yet possible to forbid the factories in dwelling-houses, as many people would be thrown out of work, especially in this country; and the regulations of the board of health dealing with these conditions are in force only in the towns. The death rate of the potters is high: Of 3,010 men examined, only 265 were apparently healthy, and only 16 were over 60 years old. The average age at death is only 41 years! The conclusions arrived at by the investigations point to the necessity of prevention of all kinds of pottery work except in properly conducted large factories.

The Arrangements for Infectious Corpses in the Vienna Cemetery

A new morgue has been opened recently in Vienna in the general cemetery for the purpose of dealing with persons dead from infectious diseases. The corpses are placed in the lying-in-state hall, which is separated by glass walls from the general waiting-hall for the friends and relations of the deceased. Special care is taken to prevent the possibility of transmission of disease during the burial ceremony. Once the body is brought to the cemetery, nobody touches it except the two to four men necessary to bring it to the grave. Even the priest must fulfill the necessary rites while separated from the body by a glass screen. The corpse is brought in a disinfected coffin, is covered with phenol or lysol, and the friends may follow only at a certain distance. The bearers must, after each funeral, change their clothes, which are at once disinfected by steam; they themselves must take a hot bath at once. The bathing rooms divide the infected area of the building from the non-infected one. Doctors, servants, bearers—all persons who have had anything to do with the corpse in the house—must pass the same ordeal of bath and disinfection of clothes. Their clothes are handed to them only after their baths. The refuse and water used in the morgue are carried away by a special system of drainage and thoroughly disinfected. A dissecting-room, together with a laboratory, is in connection with the morgue, and all work is done here under the strictest precautions. For especially dangerous corpses, there are three isolation cells, capable of holding three bodies at a time, so that a more effective disinfection is possible. The cost of the institute amounted to only $60,000, and the current expenses amount to about $70 per funeral.

The Weather and the Health

The unusual climatic conditions this summer have had a marked influence on the general health. According to the monthly returns of the bureau of health the number of affections of the alimentary canal among children is unusually small compared with the number of cases of infectious diseases owing to the protracted period of rain lasting now, with some slight interruptions of from three to five days of fine weather for more than twelve weeks. Summer diarrhea, cholera infantum and other summer affections are nearly absent. Perhaps the freedom from cholera, in spite of its ravages in the neighboring districts of Russia, is also partly due to the excess of rain. Another very welcome feature of this summer, in itself perhaps no less responsible for the good health of the public, is the complete absence of flies and other insects observed by the farmers. Diseases of the respiratory organs, as well as rheumatic conditions, have been and still are very numerous, though mortality is low. On the whole, central Europe, to which this country belongs, has had the privilege of enjoying a regular oceanic climate similar to that of Ireland.

The Conflict Between Dental Surgeons and Dentists

In this country there are two kinds of dentists, the *Zahnärzte*, surgeon-dentists with the diploma of M.D., and the *Zahntechniker*, or dentists without university or hospital diplomas. The latter were until recently only assistants of the surgeon-dentists, doing chiefly the technical dentistry, prosthetic appliances, putting in artificial teeth and crowning partly destroyed teeth. But about a dozen years ago these assistants obtained permission to practice this prosthetic dentistry if controlled by a qualified surgeon, and since that time they have always been endeavoring to shake off the control and become independent. Indeed, they even try to get the whole of dentistry into their own hands and leave to the surgeon-dentist nothing but the filling of the carious teeth, or the extraction of whole teeth, while the extraction of stumps necessary in the adaptation of the mouth before use of artificial teeth they claim for themselves. The demands of the technical dentists mean nothing else but the overthrow of the law prohibiting quackery. The medical profession as a whole has endorsed a protest addressed by the medical council of Vienna to the Minister of the Interior. A compromise has been suggested by the other party, all the present dentists possessed of diplomas or not, to be allowed to practice in the human mouth, but in future no independent technical dentists to be permitted. This being refused by the medical profession, the technical dentists have changed their tactics and cry for a clear division of rights, surgical procedures to belong to the surgeons, artificial dentistry to the technical dentists. The acceptance of this platform would mean the ruin of the dental surgeons, for hardly ten men could make a living out of extraction and stopping of diseased teeth only. There are over 400 dental surgeons in Vienna alone, while there are in all Austria about double the number of technical dentists. There is reason to hope that the medical point of view, being identified with the interests of the public health, will prove the stronger of the two.

The Jubilee Hospital in Vienna

The municipality of Vienna proposes to spend $2,250,000 in the erection of a hospital with 1,000 beds, intended to commemorate the jubilee of the Emperor Francis Joseph. The directors and heads of the departments will not belong to the Vienna University. In October the work will be commenced, and it is expected to finish it in eighteen months. The plans provide for open air pavilions and spacious corridors for children. Details of the hospital, which will be the most up-to-date institution of its kind, will be forthcoming in a short time.

Pharmacology

BUCHANAN CANCER REMEDY

A correspondent submitted for analysis a "cancer paste" that had been manufactured and sold by the Buchanan Medical Co. of New York City. The only information available concerning the composition of the paste was that contained in a booklet formerly published by the manufacturer, in which it is stated:

"Chlorid of Chromium (ozonized; the cancer antidote). The liquid chlorid of chromium is added to pulverized bloodroot, or some other inert powder; is made into a paste of the consistency of tar . . ."

ANALYSIS

The sample was submitted to the Association laboratory, which reported as follows:

"The sample of Buchanan's Cancer Cure was a dark, brownish-red, pasty mass of about the consistency of tar. Its odor was not characteristic. Examination showed that chromium salts were not present. The active ingredient was found to be zinc chlorid. With this was mixed a finely ground vegetable powder and some mucilaginous substance. Glycerin, sugar, alkaloids, resins and fats were not found. The vegetable tissue possessed the general structures of rhizomes and in some characters resembled bloodroot, but could not be identified positively. There was considerable starch present, but its identity could not be made out, since the structure of the starch grains had been destroyed, probably by the zinc chlorid. A red coloring matter was present. Further than a quantitative determination of zinc chlorid, an exhaustive chemical examination was not undertaken, although tests were made for a considerable number of substances which the nature of the remedy suggested.[1] The analytical results are given herewith:

Anhydrous zinc chlorid............	46.3 per cent.
Vegetable tissue, dry...............	9.2 per cent.
Mucilaginous matter	12.2 per cent.
Moisture	19.1 per cent.
Undetermined (starch, loss, etc.)....	13.2 per cent."

Zinc chlorid mixed with an absorbent, such as flour, starch, powdered *galangal*, powdered althea, gypsum, etc., has been employed in the treatment of cancer for many years. The Buchanan remedy, therefore, evidently contains nothing new. It belongs to that great army of "wonderful new discoveries" which examination usually shows to be well-known remedies. The statement that the cancer antidote is "chlorid of chromium ozonized" is not only false but meaningless, no such product being known. It is evidently intended to mislead the unwary physician by the use of the term "ozonized."

THE AMERICAN COLLEGE OF MECHANO-THERAPY

"Manual Manipulation" and "Curative Mechanics" Taught by Mail

In the realm of the new "drugless" quackery probably no field has been more thoroughly worked than that of "manipulation." The absence of laws in many states and the inadequacy of such laws as do exist makes the "treatment" of disease by mechanical means a veritable gold mine for the unscrupulous and incompetent. The rise of osteopathy and its latest freak offshoot—kiropractic—is but one illustration of what has been done in the way of commercializing manual manipulation as a therapeutic agent.

In his "Great American Fraud" series Samuel Hopkins Adams calls attention to the absurdity of the proposition put forward by numerous quacks that it is possible to treat diseases by correspondence. As Mr. Adams says, it is "like mending chimneys by mail." On a par with this is the teaching of "manual manipulation" by correspondence. This feat is accomplished (?) by an institution calling itself the "American College of Mechano-Therapy" having its headquarters in Chicago.

The advertisements of this concern put the "science of mechano-therapy" as taught by it on a frankly commercial basis. The important and much-emphasized point is that by studying mechano-therapy you can "earn from $3,000 to $5,000 a year."

WHAT IS A "MECHANO-THERAPIST?"

The individual who, attracted by this get-rich-quick proposition, is anxious to learn something about the general principles of the cult, is told:

> "His [the mechano-therapist] medicines . . . . . are not drugs but scientific combinations of food, circumstance, idea, water and motion."

After mentally digesting this somewhat abstruse proposition, descriptive of the fundamental principles of mechano-therapy, the reader learns further, that:

> "His instruments are not knives and saws, but his own deft hands and the vital processes of the body itself, the circulation, respiration, secretion, etc., which he manipulates as he sees fit and his judgment dictates."

In other words the graduate of the American College of Mechano-Therapy "manipulates as he sees fit" his patient's "secretion" by "scientific combinations of food, circumstance, idea, water and motion." It would surely be hard to find a more meaningless jargon of words outside of Mrs. Eddy's "Science and Health."

The dean of this "college" is W. C. Schulz, M.D., who, we are told, "has had a thorough European training, and so *combines all the learning of the great schools of the world.*" [Italics ours.—Ed.] The subjects taught at this institution of learning are, according to the catalogue, the following:

> "Anatomy, Physiology, Diagnosis, Hygiene, Dietetics, Hydrotherapy, Manual Manipulation, Swedish Movements, Vibration, Oscillation, Mechanics (curative), Suggestive Therapeutics . . . Ethics, Establishment, Promotion and Business Methods."

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[1] Details of Analysis.—Owing to the small quantity of sample submitted, duplicate determinations could not be made.

Alcohol-insoluble: A portion was dissolved in alcohol so far as possible, filtered, dried and weighed; 1.6578 gm. gave 0.3557 alcohol-insoluble residue, or 21.4 per cent.

Zinc: The alcohol-insoluble portion was washed, dissolved in hydrochloric acid, so far as possible, the filtrate, added to the alcohol-soluble portion, the mixture evaporated to small bulk, and the zinc precipitated as zinc ammonium phosphate. (Olsen, "Quant. Chem. Anal.," 1904, pp. 82 to 84.) The precipitate was dissolved in hydrochloric acid, re-precipitated, dried, ignited and weighed as zinc pyrophosphate. 1.0790 gm. gave 0.5599 gm. zinc pyrophosphate, equivalent to 46.3 per cent. anhydrous zinc chlorid.

Moisture: This was determined approximately by drying over concentrated sulphuric acid; 1.0790 gm. gave a loss of 0.2063 gm., or 19.1 per cent.

Vegetable Tissue (water-insoluble portion): This was determined by dissolving a sample as completely as possible in distilled water, filtering and drying the residue at 98C.; 3.264 gm. gave 0.3011 gm. residue, or 9.23 per cent.

Mucilaginous Matter: An approximate value for the mucilaginous substances and soluble starch was obtained by subtracting the portion insoluble in water (vegetable tissue) from that insoluble in alcohol (vegetable tissue and mucilaginous substances). 21.45 per cent.—9.22 per cent.=12.23 per cent.

In addition to these numerous subjects, "Osteopathy" is thrown in for good measure; and all this is taught by correspondence! Apparently there is no limit to human credulity when cupidity beckons. In referring to the time required to complete the "course" and thus receive the diploma, which is "handsomely executed on art parchment," we are told:

> "In six months you can begin practicing mechano-therapy."

Of course the acquirement of the *tactus eruditus* is all-essential, "but it is no more difficult than learning to ride a bicycle." And incidentally that suggests the commercial possibilities of teaching bicycle riding or even equestrianism by mail!

THE "BUSINESS SIDE"

In addition to the various subjects from anatomy to suggestive therapeutics that are taught by this "college" the curriculum includes "The Business Side of Mechano-Therapy." This *important* subject deals with such problems as:

> "How to approach a Patient."
> "How to get the Fees at once."
> "The Business *talk* that will make the Patient willing to pay the fee."
> "How to handle the Question of the size of a Fee."
> "Real Money Talk."
> "Always get Cash down."

The "business side," too, is particularly emphasized in the advertisements of the college:

> "Opportunities to make money in Mechano-Therapy are everywhere. You need not leave home to make your fortune."
> " . . . . we guarantee success . . . . . . "
> "We fit you in a few months so you may become successful and earn from $3,000 to $5,000 a year."
> "Unlimited income to graduates."
> "We know of no other calling . . . which promises the same financial returns that Mechano-Therapy does."

Such is the bait, which, judging from the amount spent in advertising, is so productive of results in catching the ignorant and avaricious.

The "instructor" in "business methods" is one S. J. Tinthoff, who also is treasurer of the "college." We learn from the prospectus that as instructor, he "is eminently well qualified for this position." In fact:

> "His knowledge of the proper methods a physician, specialist or Mechano-Therapist may pursue in order to build up a large practice, is perhaps unsurpassed by that of any other man in the United States."

We are told, too, that F. S. Tinthoff, brother of S. J. Tinthoff, and "Director of the Correspondent Department, is also a trained business man and expert correspondence instructor." We understand that F. S. and S. J. Tinthoff operate the "Aurum Company," which does a mail-order business in "Vestro," which is modestly claimed to be "the only true Bust Developer on the market to-day." If we are not mistaken, too, F. S. Tinthoff was president and treasurer of the now defunct "Physician's Institute" of Chicago. The question arises: Does an experience in operating a "physician's institute" and filling mail-orders for the "only reliable bust developer" qualify a man for the position of "instructor" in a correspondence "college of Mechano-Therapy?"

LEGAL STATUS OF MECHANO-THERAPY

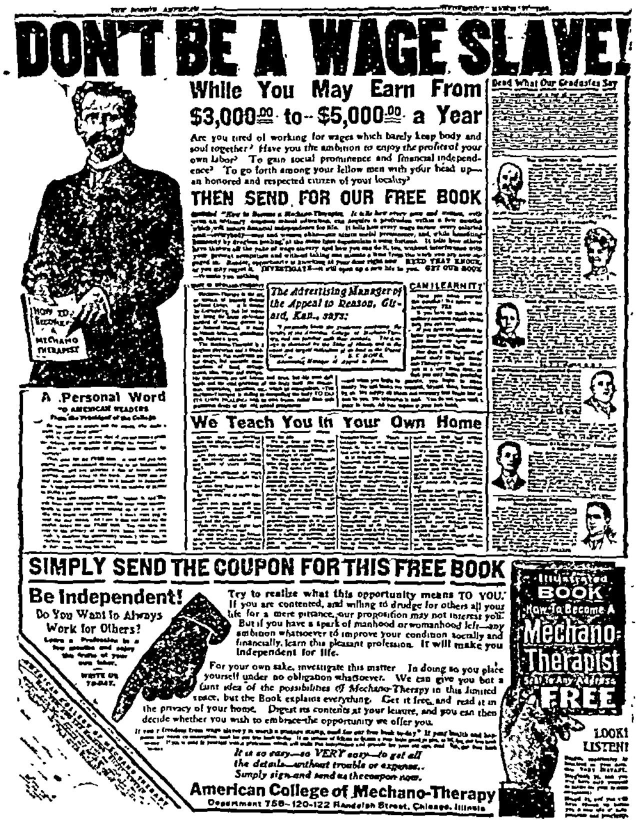
The American College of Mechano-Therapy advertises: "We Teach You How to Treat Disease Without Drugs." A prospective student who wished to know what legal restrictions there might be to the practice of this method of "treating" disease, wrote as follows: "If I should take your course and receive a diploma could I practice Mechano-Therapy in *any* of the states? I understand that the different states have different laws regarding the practice of medicine and I would like to know if there are any restrictions in regard to Mechano-Therapy?"

The reply he received may well be pondered over by those who believe that medical practice acts exist for the benefit of the public:

> Dear Friend:—There are no laws on the statute books regarding Mechano-Therapy. In Illinois for instance, there is the so-called "*Drugless Healing Act*" applying to all such methods as Mechano-Therapy, Osteopathy, etc. Some of our graduates have qualified under this law by examination, while *others carry on their work under the advice and consent of a friendly M.D. We recommend the latter method* [Italics ours.—Ed.] until such time as Mechano-Therapy is regulated by legislative enactment in the various states.
>
> Yours truly,
> American College of Mechano-Therapy,
> W. C. Schultze, M.D.

METHOD OF INTERESTING "STUDENTS"

The individual who writes to this college for information receives a three-page letter and a "prospectus" The latter is *entitled*, "*How to Become a Mechano-Therapist*," and the first page is taken up with a full-page picture of the "home of the American College of Mechano-Therapy." This "home" is pictured as a nine-story building, across the top of which appears in large letters, the legend: "American College of Mechano-Therapy." The natural inference to one not conversant with the facts would be that the "college" occupied the entire building. In reality, however, it occupies some rooms on the sixth floor of the building in which it is located, and the building carries no such legend as is shown in the picture.



DON'T BE A WAGE SLAVE!

While You May Earn From $3,000.00 to $5,000.00 a Year

Are you tired of working for wages which barely keep body and soul together? Have you the ambition to enjoy the profits of your own labor? To gain social prominence and financial independence? To go forth among your fellow men with your head up—an honored and respected citizen of your locality?

THEN SEND FOR OUR FREE BOOK

Read What Our Graduates Say

The Advertising Manager of the Appeal to Reason, Girard, Kan., says:

CAN I LEARN IT?

A Personal Word
TO AMERICAN READERS
From the President of the College

We Teach You in Your Own Home

SIMPLY SEND THE COUPON FOR THIS FREE BOOK

Be Independent!
Do You Want to Always Work for Others?

WRITE US TO-DAY.

Try to realize what this opportunity means TO YOU. If you are contented, and willing to drudge for others all your life for a mere pittance, our proposition may not interest you. But if you have a spark of manhood or womanhood left—any ambition whatsoever to improve your condition socially and financially, learn this pleasant profession. It will make you independent for life.

For your own sake, investigate this matter. In doing so you place yourself under no obligation whatsoever. We can give you but a faint idea of the possibilities of Mechano-Therapy in this limited space, but the Book explains everything. Get it free, and read it in the privacy of your home. Digest its contents at your leisure, and you can then decide whether you wish to embrace the opportunity we offer you.

It is so easy—so VERY easy—to get all the details—without trouble or expense. Simply sign and send us the coupon now.

American College of Mechano-Therapy
Department 756—120-122 Randolph Street, Chicago, Illinois

Illustrated BOOK
How To Become A Mechano-Therapist
Sent To Any Address FREE

LOOK! LISTEN!

Reproduction of a full-page advertisement from the *Boston American*, March 31, 1909.

VARIABLE TUITION RATES

The form letter, after expatiating on the virtues and money-making possibilities of the "course" winds up by calling attention to the fact that the tuition is $100 cash "for the complete course." The tuition rates, however, seem to vary. One person who inquired about the course was told in the first letter that it cost $100; in the second letter he was told that "*we expect* shortly to advance our fees to $200"—but they would still accept this particular individual at the $100 rate; in the fourth letter he was told that the advance *had been made* "and our present terms are $200 cash," but as a special proposition he would be accepted "at the old special reduced rate;" in the *fifth* letter he was offered the "complete course" for $60, but the "college" insisted that he *must* "hold this special reduced price strictly confidential." As a (presumably) final "confidential price" he was offered the "regular $100 correspondence course in Mechano-Therapy for only $25 cash."

Another individual was offered the course for $50—and this, too, within a few days of the time that the first person received notice that the fees had been "advanced" to $200. Other persons have been offered a 50 per cent. discount ($50 cash) with the first letter. It should be said that all the "enrollment blanks" which we have seen—and they are many—give the cost of the course as $100.

The extensive advertising done by this concern would seem to demonstrate its profitableness. On both sides of the Atlantic the public has been advised through the daily and weekly press of the commercial possibilities of "mechanotherapy" as taught by this "college." In commenting on the part that the press plays in making such concerns as this profitable, London *Truth* says:

"It passes my understanding how wealthy newspaper proprietors . . . can condescend to take money for foisting this sort of bunkum on their readers; but as long as they do so, cheap postage to America will certainly put money into some pockets."

Elsewhere the same publication, in describing the "college," calls it "a concern which proposes to give postal tuition in quackery to British fools"—a description which can only be improved by the substitution of "English-speaking" for "British."

Correspondence

Age and Exercise

To the Editor:—I have read with approbation your editorial, "The Septuagenarian Pedestrian," in the issue of August 7. I fully agree that Mr. Weston's performance is "sufficiently noteworthy . . . to deserve mention in a medical journal;" in fact, I go further and assert that it is a demonstration of transcendent importance to all mankind that a man after he is biblically dead, so to speak, having passed his seventieth birthday, can accomplish a feat hitherto considered next to impossible, to-wit, the walking of 3,975 miles in 105 days, or almost 38 miles a day, over, in many cases, execrable roads or on railroad ties, in severe storms, in mud, snow and sleet and sometimes, which is often worse, sand. This great exhibition of human pluck and endurance at an advanced age, is, to my mind, of far more importance than the question of the exact bacillus that causes meningitis, to the discussion of which you cheerfully give up 18⅛ inches of your most conspicuous editorial space, while Mr. Weston's performance gets less than 2½ inches of space, and that at the "tail end," giving one the impression that it is just a "filler." Pardon me if I seem to undervalue your admirable "leader." On the contrary, I enjoyed it and profited by it greatly.

However, my principal object in writing this letter is that I wish to correct one or two erroneous inferences which might readily be drawn from your editorial on pedestrianism. You say that "he [Weston] comes before the public in this spectacular way after about a quarter of a century of comparative obscurity." Among those who take no interest in feats of human endurance, and the improvement of man's physique, Mr. Weston's career for the past twenty-five years may have excited little or no interest. Yet his utterances on temperance and the benefits of exercise have attracted, and deservedly so, considerable attention; and inasmuch as he has participated in a number of pedestrian contests during that period, the sporting element also have had occasion to keep him in mind. In support of this contention, I venture to give a partial list of his performances since 1867:

In 1867 he walked from Portland to Chicago.

In 1868 he walked 100 miles in 24 hours.

In 1870 he walked 100 miles in 21 hours and 39 minutes.

In 1875 he walked 115 miles in 23 hours and 40 minutes without a rest.

In 1879 he walked 550 miles in 141 hours and 44 minutes.

In 1884, under the auspices of the "Church of England Temperance Society," he walked 50 miles a day for 100 consecutive days (Sundays excepted) over English roads, making a total of 5,000 miles, and lectured every night on temperance, of which he has always been an ardent advocate.

In 1886 he walked 2,500 miles against Daniel O'Leary and beat the latter by 200 miles.

In 1893 he walked 160 miles in 39 hours and 59 minutes.

In 1907 he walked from Portland to Chicago in 24 days and 6 hours, beating his own record of 40 years before, by over 16 hours.

He has frequently spoken of his way of life, asserting that he has never taken a drink over a bar. That he eats only twice daily as a rule, and then in great moderation. That he walks 12 or 15 miles every day for exercise, and is consequently always "in condition." He sleeps six hours at night and takes a siesta during the day. Hence it is fair to say that the man is well known, and that the causes of his wonderful endurance are well known. Your editorial concludes with the words that "probably many other men with like training and temperate habits could somewhat approximate his record." A little examination of the subject will show that other men, not to say *women, have already approximated his record.* If you will pardon me, I will take up a little more space to quote a few instances.

Moses Cleveland, a cousin of former President Grover Cleveland, when 82 years old, ran a foot race of a half mile against L. C. Lawrence, aged 80, at Worcester, Mass., and won after an exciting contest by a few yards. Mr. Cleveland declared that he could have run another half mile just as fast as he had won the race, and challenged any man in the world of his age to run a foot race of any distance for any stakes.

Surgeon Major Hinton, who enjoys the distinction of being the oldest member of the Royal College of Surgeons in Great Britain, is in his 95th year. He walks for pleasure 5 miles or more every day. In 1851, Mary Callnack, then 84 years of age, walked from Penzance to London, a distance of nearly 300 miles.

The Emperor Francis Joseph of Austria, at 76 years of age, still stalked "the chamois in its mountain fastnesses."

Timothy Dillon died in New Rochelle, N. Y., in August, 1906, at the age of 100 years. Up to within two days of his death he had taken a daily walk of 4 miles and had formerly walked 20 miles and back twice a week.

Mark All, an Englishman, 78 years of age, had a year or two ago walked 51,751 miles in an attempt to walk 60,000 miles in seven years. A favorite bull dog, after having kept up with his master for 21,000 miles, died.

Hancock says in the introduction of his book on "Exercises for Women," that a teacher of jiu jitsu in Japan, aged 75, vanquished every competitor at this sport who appeared against him.

A Mr. Brown of Philadelphia began playing golf at 50 and at 64 won a tournament, defeating nineteen or twenty competitors, some of whom were thirty years his junior. The newspaper account of this contest says that Mr. Brown had no handicap and won solely on the merits of his play.

A contortionist, aged nearly 80, in perfect health, was looking around a few years ago to find a medical man to whom he could sell his skeleton. He had already disposed of it twice, once to a doctor in Detroit who died, and then to another in New York who had also died.

Mary Wheaton, aged 72, gave not long ago exhibitions of fancy swimming and diving at Bangor, England. She has been an expert swimmer for fifty-seven years.

One hundred thousand miles on a bicycle is the record of Thomas W. Davis of Peoria, Ill., made between the ages of 65 and 75. This includes a number of "century runs," one made when he was 73, in which he outrode a number of younger men.

William O. Greene of Milwaukee, 71 years old, frequently rides 100 miles a day on his "wheel."

"Jem" Mace, the veteran prize fighter, sparred in the ring at 80 years of age. He was noted as a total abstainer.

These are a few records, selected almost at random, from a number collected during the past dozen years or more. No doubt a systematic search would bring to light an indefinite number of similar histories. The point to be noted is that Mr. Weston's record, although remarkable, is by no means unattainable by any faithful pedestrian who is willing to pay the price (1) by long years of constant effort in perfecting himself as a pedestrian; (2) by great abstinence and self-denial, and (3) by sufficient confidence in his own almost limitless powers. Most men lie down and die, not knowing what they are capable of, either mentally or physically. Mr. Weston says that in 1870, when he was preparing to walk 100 miles in twenty-four hours Horace Greeley said to him that it was wicked to encourage him in such an effort, and added: "You are young and spry now, but wait until you are 50 years old and then you can not walk 40 miles a day." No doubt that worthy editor thought he was performing a solemn duty in trying to prevent the rash young man from doing himself a permanent and irreparable injury. Do not wise people still shake their heads and allude to the terrible consequences to be expected in after years if anyone should "over-exert himself" or get 'too tired?" The very indefiniteness of these terms seems to add to their mental picture of the disasters that will follow the disregard of their warnings.

Revolutionary as it may seem, I am prepared to maintain that Mr. Weston, "Jem" Mace, Mr. Cleveland and all the others I have mentioned, have actually lived longer than they otherwise would have done, by reason of their bodily exercises, and not in spite of them. There is no question that college athletes are longer lived than the non-athletic scholars, and if you say that is because they are stronger to begin with than their more sedentary brethren, I deny that. Mr. Weston, like Sandow, Blaikie, Mr. Roosevelt, Dr. Winship and many others, went into physical exercises because they were sickly as boys, and not for pastime.

Fortunately, people are at last beginning to wake up to the paramount necessity of educating and developing the body, and are beginning to perceive that while we are wasteful of many things, we are not so wasteful of any other thing as we are of our own and our children's lives; and, by the way, is it not time that we should drop the use of that unscientific limit to human life so beautifully stated in the Ninetieth Psalm, as it evidently has only a poetical meaning? For that matter, there is just as good biblical authority for placing the limit of our days at 120 years as at 70 years (see Genesis, Chap. vi:3). The former figure, moreover, nearly accords with present scientific opinion as to the length human life should attain than does the latter.

The ignorance and prejudice that surround these all-important questions can scarcely be dispelled until they are approached in a more rational and scientific spirit. While the influence of "the wise old lady next door" is somewhat diminished in clinical medicine, she is still much in evidence in preventive medicine and personal hygiene, as shown, for example, by Mr. Greeley's remarks just quoted in regard to the sad condition in which Mr. Weston would find himself at 50, if he should persist in his dangerous practice of walking. However, the light is slowly breaking as Parkes puts it: "As ages roll on, hope does in some measure grow. In the midst of all our weaknesses, and all our many errors, we are certainly gaining knowledge, and that knowledge tells us in no uncertain language, that the fate of man is in his own hands."

RICHARD COLE NEWTON, M.D., Montclair, N. J.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TUBERCULOSIS—A BACTERIEMIA?

To the Editor:—In connection with the editorial in THE JOURNAL June 19, 1909, on the theory of tuberculosis as a bacteriemia, in which the results of Forsyth in confirmation of the work of Rosenberger are discussed, as well as Rosenberger's observations, I wish to call attention to a paper by Burnham and Lyons read before the Louisiana State Medical Society, May 4-6, 1909, in which the results of study of ten cases of tuberculosis by the staining methods of Rosenberger, in every case, gave negative results. I note in THE JOURNAL, Aug. 21, 1909, that Ravenel and Smith presented a paper before the Wisconsin State Society in which eighteen cases were studied in the same way with negative results. This subject is one of great interest and in view of the contradictory reports of the observers quoted I think that the question can well be considered doubtful as to whether or not tubercle bacilli are really present in the blood stream. I would like to ask if any other investigators have confirmed or failed to confirm the observations of Rosenberger?

M. P. BURNHAM, Harrisonburg, Va.

ANSWER.—Our correspondent and others may be interested in an article entitled "Tests Concerning Tubercle Bacilli in the Circulating Blood," in the *Archives of Internal Medicine,* August, 1908, ii, 133. The authors, E. C. Schroeder and W. E. Cotton, examined microscopically the blood of forty-two tuberculous cows and bulls, but failed to find tubercle bacilli. The blood from the tuberculous cattle was injected into eighty-eight guinea-pigs, also with negative results.

AIDS TO OBSTETRIC TRACTION BY THE PATIENT

To the Editor:—Sometimes a simple device is of great benefit to humanity. For twenty-four years I have practiced obstetrics: the first four years were times of labor indeed. Any physician who has attended a good strong woman in the second stage of labor, who meant business, and who wished to have her husband, nurse or neighboring women pull on her hands while she was doing her *best to expel* the presenting head, would, it seems to me, welcome the following simple labor-saving device: (1) Take a towel at least 26 inches long and 14 inches wide and catch it by diagonal corners with the thumb and fingers; (2) twist it into a rope; (3) tie the diagonal corners with a square knot—the towel is then converted into a ring with a diameter of 7 inches; (4) fix another towel like the first; (5) place the patient, after the first stage of labor, in the dorsal or lateral prone position with the legs flexed on the thighs; (6) place the rings over the knees and insist that the patient grasp a ring with each hand, while the nurse or some one else keeps the rings from slipping off the knees. The patient is then instructed to pull and hold the breath at the same time. She will recognize after a pain or two, that the rings afford her great comfort, and are an appreciable help in advancing the labor. The use of these rings inspires the patient with confidence in her own strength and her ability to terminate the labor. This device also saves the people in waiting much fatigue, as well as saving the patient from being dragged all over the bed. The device is simple, and always at hand. I have never seen this simple device mentioned in literature.

FRANK DEWITT REESE, Cortland, N. Y.

ANSWER.—In obstetric cases, physicians frequently have to improvise some such simple apparatus as that described above Instead of flexing the knees on the thighs the towels may be placed around the patient's legs, just above the knees, so that she may grasp them as is here suggested and no one need hold them. Another method frequently used is to twist a sheet cornerwise and put it over the crossbar at the foot of the bed, put knots on the ends and let the patient pull on the sheet. Various other simple methods are in common use as well as patented tractors of straps and loops which are more or less complicated. If it will comfort the patient to have something human to hold in place of the effective sheet-rope, let the husband or some one else assist her, but if the medical attendant has tact and firmness it is seldom necessary for him to use up his time and strength *in helping* the patient pull. Our correspondent does not mention the danger that the physician may be so tired and his hands so lamed that he can not give the strength and skill necessary in some complication such as dystocia, retained placenta, hemorrhage, or asphyxia.

NEED OF A SECTION ON PSYCHIC FORCES

To the Editor:—I applaud the call made by Dr. G. Betton Massey, (THE JOURNAL, July 31, 1909, *p.* 394) *for* the establishment of a new "Section on Physical Forces in Medicine and Surgery," and offer an amendment that the new Section embrace the psychic as well as physical forces. I would ask an expression of opinion from the profession.

There is on the part of the people so much unrest and insurrection over the inefficiency of drug therapy which has been indiscriminately prescribed with little or no benefit in a large and rapidly increasing number of cases of nervous disorders that continued neglect of the more effective *psychic and physical* forces for the cure of these disorders will bring disaster to the profession and to the community at large.

Although the development of the psychic forces would perhaps more logically belong to the Section on Nervous and Mental Diseases, the members of that Section have told us so plainly that they are too busy to give the attention to the subject which its importance demands that we must look to new men to develop it, and besides it is a subject on which the general practitioner of the future will have to be educated, and, all things considered, I believe that the best possible way to develop the psychic and physical forces which will in the future play an increasingly important part in the healing art is to organize a new Section, which in my judgment will not be lacking in earnest work and hearty support at any meeting.

GUSTAVUS WERBER, Washington, D. C.

CHEESE IN TREATMENT OF CELLULITIS

To the Editor:—Recently I had a case of cellulitis of the hand with badly engorged lymphatics and ascending phlegmonous manifestations. The hand was swollen, the arm brawny and swollen. I made free incisions in the hand, applied hyperemic cups and arm band, and soaked the parts for hours in hot bichlorid of mercury. The arm was getting along well, but one day I noticed it white and the skin loose and apparently bloodless. The patient said that on the entire arm he had placed the ordinary *fresh* cottage cheese—*Schmierkäse* of the Germans—and the benefit seemed more than that obtained from the Bier treatment, incisions and bichlorid of mercury. I would like to know from what source the benefit was derived. Unfortunately, I made no *microscopic* examination of the pus, but my own *explanation* was that the lactic and butyric acid organisms must have had an inhibitory or bacteriolytic *action on those pus organisms. Can you tell me if this is so?* Is there any literature on the subject? Or did the bactericidal serum or opsonins of the body simply overcome the invading organisms? Cheese is a household remedy among the Slavs for pneumonia, erysipelas and any local infection, and, strange to relate, it works.

C. E. McDERMID, Charleroi, Pa

ANSWER.—The application of cheese is of little if any benefit. It is true that fresh green cheese contains many lactic acid bacteria, but usually the ordinary kind; and it would be rather difficult for these bacteria to reach the seat of the trouble. It is not impossible that the application of the cheese had a similar effect to that of a moist poultice. The statement that Slavs use cheese for pneumonia and erysipelas successfully is rather indefinite; many popular ideas are devoid of scientific basis and should be mistrusted It is probable that the supposed benefit derived from application of cheese is purely coincidental.

PHOSPHORESCENT SIGNS FOR PHYSICIANS

A correspondent states that some years ago an agent sought to sell him a sign for his office to contain his name in phosphorus letters, so that in the day time it would appear as a plain white sign, but at night would shine with a phosphorescent glow. He asks the name and address of any firm that makes such signs, and we will be glad to pass the information on to him if any of our readers can inform us.

The Public Service

Medical Department of the Army

Memorandum of changes for the week ended Aug. 21, 1909:

Robbins, Chandler P., major, granted leave of absence for one month.

Reynolds, Charles R., major, granted leave of absence for 10 days.

Russell, F. F., major, ordered to proceed from Washington, D. C., to Fort Sill, Okla., and return, on business connected with the Medical Department.

Siler, Joseph F., capt., ordered to proceed from New York City to Peoria, Ill., and return, on business connected with the Medical Department.

Drake, Percy G., 1st lieut., M. R. C., ordered to proceed from Fort Ethan Allen, Vt., to Fort Leavenworth, Kan., for temporary duty.

Morse, Arthur W., major, relieved from duty at the Presidio of Monterey, Cal., and ordered to the Philippine Islands, for duty on Oct. 5, 1909.

Parce, Alexander D., 1st lieut., Wilson, James A., 1st lieut., relieved from duty with Co. C., Hospital Corps, Fort Niagara, N. Y., and ordered to the Philippine Islands for duty on Oct. 5, 1909.

Trotter-Tyler, George, 1st lieut., M. R. C., relieved from duty at Vancouver Barracks, Washington, and ordered to the Philippine Islands, on Oct. 5, 1909.

Winter, Francis A., major, Darnall, Carl R., major, Pipes, Henry F., capt., appointed members of a board of officers of the Medical Corps, to meet at the Army Medical Museum Building in Washington, at the call of the senior member of the board, for the purpose of conducting the preliminary examination of applicants for appointment in the Medical Corps of the Army.

Wickline, Wm. A., capt., granted 30 days' leave of absence.

Ekwurzel, George M., capt., granted leave of absence for three months, to take effect on his relief from duty in the Philippines Division.

Schmitter, Ferdinand, 1st lieut., granted leave of absence for four months, with permission to go beyond the sea.

Shillock, Paul, major, relieved from treatment at the Army and Navy General Hospital, Hot Springs, Ark., and will return to his proper station.

Howard, Deane C., major, granted two months' leave of absence, to take effect on his arrival in the United States.

Juenemann, George P., capt., granted 10 days' leave of absence Aug. 19.

Ames, John R., *dental surgeon*, accompanied by a member of the Hospital Corps, as assistant, will proceed from Fort Snelling, Minn., about Sept. 1, 1909, to the following named posts in the order given and report to the commanding officer for temporary duty during the period indicated to perform dental work for officers and enlisted men: Fort Lincoln, N. D., 15 days, Fort Assinniboine, Mont., 30 days.

Scott, Harold O., *dental* surgeon, relieved from duty in the Philippines Division, and on arrival at San Francisco, to report by telegraph to the Adjutant General of the Army for further orders.

Medical Corps of the Navy

Changes for the week ended Aug. 21, 1909:

Robertson, G. E., acting asst.-surgeon, ordered to duty at the Naval Hospital, Boston.

Ledbetter, R. E., surgeon, detached from the Naval Academy, and ordered to the Naval Station, Cavite, P. I.

Noble, D. H., asst.-surgeon, detached from duty at the Naval Hospital, Las Animas, Colo., and ordered to the Third Squadron, Pacific Fleet, via the *Maryland*.

Sinclair, J. A. B., asst.-surgeon, detached from the Naval Proving Ground, Indian Head, Md., and granted leave of absence for 2 weeks.

Dunn, H. A., P. A. surgeon, ordered to the Naval Proving Ground, Indian Head, Md., August 23.

Webb, U. R., P. A. surgeon, ordered to duty at the Naval Hospital, Mare Island, Cal., August 24.

Henry, R. B., asst.-*surgeon*, *detached from* the Naval Magazine, Iona Island, N. Y., and ordered to the Third Squadron, of the Pacific Fleet.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Aug. 18, 1909:

Glennan, A. H., asst. surgeon general, leave granted July 17, 1909, for 28 days from July 20, 1909, amended to read 25 days from July 20, 1909.

Stoner, George W., surgeon, granted 11 days' leave of absence from August 17, 1909.

Banks, Charles E., surgeon, granted 5 days' leave en route to station.

Cobb, J. O., surgeon, granted 10 days, leave of absence from Aug. 15, 1909.

Wertenbaker, C. P., surgeon, granted 1 month's leave of absence from Aug. 16, 1909.

Lavinder, C. H., P. A. surgeon, directed to proceed to Peoria, Ill., on special temporary duty.

Parker, Herman B., P. A. surgeon, granted 15 days' leave of absence from Aug. 16, 1909.

Ramus, Carl, P. A. surgeon, granted 1 day's leave of absence, July 11, 1909, under paragraph 191, Service Regulations.

Goldberger, Joseph, P. A. surgeon, granted 1 day's leave of absence en route to station.

McCoy, G. W., P. A. surgeon, directed to make certain inspection trips in Contra Costa and adjacent counties in California on special temporary duty.

Ebersole, R. E., P. A. surgeon, granted 2 months' leave of absence from Aug. 12, 1909.

McKeon, F. H., P. A. *surgeon, granted 4 days' leave of absence* from June 29, 1909, under paragraph 191, Service Regulations.

Chapin, C. W., asst.-surgeon, directed to proceed to Portland, Ore., on special temporary duty.

Bean, L. C., acting asst.-surgeon, granted 5 days' leave of absence from Aug. 15, 1909.

Cross, I. J., acting asst.-surgeon, granted 30 days' leave of absence from Sept. 9, 1909, with pay, and 13 days from Oct. 9, 1909, without pay.

Fabian, J. J., acting asst.-surgeon, granted 6 days' leave of absence from Aug. 2, 1909, under paragraph 210, Service Regulations.

Hamilton, H. J., acting asst.-surgeon, granted 2 days' leave of *absence from* Aug. 16, 1909.

Townsend, W., acting asst.-surgeon, granted 14 days' leave of absence from Aug. 8, 1909.

Walkley, W. S., acting asst.-surgeon, granted 4 days' leave of absence from Aug. 25, 1909.

BOARDS CONVENED

Board of medical officers convened to meet at the Marine Hospital, Baltimore, Aug. 16, 1909, for the purpose of making a physical examination of two officers of the Revenue-Cutter Service. Detail for the board: Surgeon W. P. McIntosh, chairman; P. A. Surgeon M. K. Gwyn, recorder.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Aug. 20, 1909:

SMALLPOX—UNITED STATES

Louisiana: New Orleans, July 31-Aug. 7, 1 case.
Montana: Butte, July 31-Aug. 7, 3 cases.
Oklahoma: Oklahoma City, July 31-Aug. 7, 1 case.

SMALLPOX—FOREIGN

Brazil: Bahia, June 11-25, 6 cases, 1 death; Rio de Janeiro, June 26-July 11, 8 cases, 2 deaths.
China: Amoy, July 3-10, 1 death; Shanghai, June 19-26, 1 case.
Egypt: Cairo, June 24-July, 1 death; Suez, June 18-24, 2 cases, July 1-8, 2 cases.
France: Paris, May 28-June 5, 7 cases, July 17-24, 2 cases.
India: Bombay, June 29-July 6, 4 deaths; Calcutta, June 19-26, 8 deaths; Madras, June 26-July 2, 1 death.
Italy: General, July 18-25, 12 cases; Naples, 39 cases, 5 deaths.
Mexico: Mexico City, July 3-10, 11 deaths; Monterey, July 25-Aug. 1, 1 death.
Portugal: Lisbon, July 24-31, 7 cases.
Russia: Libau, July 18-25, 1 case; Riga, July 11-24, 7 cases; St. Petersburg, July 3-10, 16 cases, 3 deaths; Warsaw, June 5-12, 2 deaths.
Siam: Bangkok, June 1-30, 1 case.
Siberia: Vladivostok, May 27-June 3, 2 cases, 1 death.
Spain: Vigo, July 18-24, 1 case.

YELLOW FEVER

Brazil: Bahia, June 11-25, 9 cases, 5 deaths.
British Guiana: Suddie, July 22, 1 case, 1 death.

CHOLERA—INSULAR

Philippine Islands: Manila, June 19-26, 76 cases, 50 deaths.

CHOLERA—FOREIGN

China: Amoy, July 3-10, 25 deaths.
India: Bombay, June 29-July 6, 12 deaths; Calcutta, June 19-26, 55 deaths; Rangoon, 2 deaths.
Russia: General, exclusive of St. Petersburg, July 23-30, 346 cases, 136 deaths; St. Petersburg, 390 cases, 165 deaths.

PLAGUE

Brazil: Bahia, June 11-25, 8 cases, 5 deaths; Rio de Janeiro, July 4-11, 1 case.
China: Amoy, July 3-10, 79 deaths; Hongkong, June 19-July 3, 7 cases, 7 deaths.
Ecuador: Guayaquil, June-July 10, 3 deaths.
India: General, June 26-July 3, 553 cases, 478 deaths; Bombay, June 29-July 6, 23 deaths; Calcutta, June 19-26, 48 *deaths;* Rangoon, 33 deaths.
Japan: Kobe, July 10-17, 3 cases, 2 deaths.
Siam: Bangkok, June 1-30, 12 cases, 12 deaths.
Venezuela: Caracas, July 17, 2 cases, July 31, 1 case.

Book Notices

Hydrotherapy. A Brief Summary of the Practical Value of Water in Disease. By William H. Dieffenbach, M.D., Professor of Hydrotherapy, New York Homeopathic Medical College and Flower Hospital. Cloth. Pp. 267, with illustrations. Price, $3. New York: Rebman Co.

The first half of this book is devoted to the general principles of hydrotherapy, and to a description, with many excellent photographs, of the apparatus and technic of hydrotherapeutic procedures. The second half is devoted to the practical application of hydrotherapy to diseases. Dr. Dieffenbach is an enthusiastic believer in "the cure of disease by water." In his introduction to the practical part of the book he says: "Although convinced of the almost universality of these applications we do not desire to be classed among those who in their zeal announce hydrothermotherapy as a panacea or cure-all. There are few abnormal conditions where *some* modality of hydrothermo-therapeutics is not called on to do yeoman service. The triumphs of hydrotherapy in fevers, especially in typhoid fever, where hydrotherapy has succeeded in penetrating the citadel of conservatism and of traditional medicine which has hampered the progress of the art of healing for ages are alone sufficient to convince the most skeptical among physicians of the virtues of water in disease." A clean-cut, concise, definite, short yet lucid and comprehensive treatise on this subject is indeed welcome. The present work is all of this—it is written by a master. And yet one can not help but feel that Dr. Dieffenbach in his sincere enthusiasm has materially detracted from the value of his work because of the very "almost universality" that he attributes to hydrotherapeutic procedures. Perfectly satisfied as we are that hydrotherapy has a very wide and very valuable range of usefulness in the art of healing, we are a little skeptical when disease after disease is mustered before us and "*some* modality of hydrothermo-therapeutics" is applied to it, or, as it seems to us at times, even forced on it. It seems to us a far cry from the well-recognized results of hydrotherapy in typhoid to such recommendations as "short cold half baths" with friction as *the* treatment of anemia and chlorosis, with no reference to iron; or to the use of the "iced compress to the vulva, with efficient vaginal packing and mechanical pressure" for the treatment of postpartum hemorrhage, etc. The following quotation in full giving the treatment of membranous croup, will illustrate what has been said:

"This fatal affection requires correct diagnosis, and prompt intervention by the physician. The indications for treatment require clearing the parts of the false membrane, preventing spasms of the glottis and keeping up the resisting power of the child. Moist heat, applied by means of the vapors of the 'croup kettle,' tends to produce local leucocytosis and hyperemia and loosens the membrane. Hot foments applied over the larynx and trachea and changed five times hourly, to be followed by the cold, stimulating compress, will act beneficially. Warm baths, with cold affusions applied every five minutes to the nape of the neck until a vigorous respiratory reaction with cough is induced, have also produced expectoration of the membrane." Such paragraphs, and especially the last sentence, do not appeal to one who has been accustomed to give antitoxin. The book is written from the standpoint of the hydrotherapeutist, as is evident from its substance and also from the titles of the author. Its appeal will be rather to the physician who specializes in institutional hydrotherapeutics, etc., than to the ordinary practitioner of medicine who believes in hydrotherapy as a most valuable adjuvant rather than as a system of therapeutics in itself. The book is nevertheless a valuable and comprehensive summary of the whole subject of hydrotherapy.

Confessions of a Neurasthenic. By William Taylor Marrs, M.D. Cloth. Pp. 114, with illustrations. Price, $1. Philadelphia: F. A. Davis Co.

This interesting bit of satire may serve to arouse some persons who are nursing their own alleged invalidism and may shed light on the conduct of friends who often unwittingly pander to hysteric conditions. If Dr. Marrs has omitted any symptoms in his fanciful portrayal, they fail to occur to us at the present moment.

The Emmanuel Movement in a New England Town. By Lyman P. Powell, Rector of St. John's Church, Northampton, Mass. Cloth. Pp. 194, with illustrations. Price, $1.25. New York: G. P. Putnam's Sons, 1909.

Mr. Powell is one of the leading workers in the so-called Emmanuel movement and may be accepted as one of the expositors of what it claims to accomplish. According to him, "every Emmanuel clinic works within the limitations set by scientific medicine," but he follows this by the statement that "every Emmanuel worker follows his own temperament and training in the application of the principle." Here lies the peril and the basis for the criticisms which have been rather numerous both from physicians and clergymen. There is no question but that a religious stimulus is of great value in many forms of mental and even bodily ailment; a thorough medical education would be of great value to many clergymen and some physicians probably suffer on account of their lack of religious faith and training. The debatable ground, however, between moral and physical healing is full of pitfalls for the injudicious and we fear that anything like a healing cult, such as the Emmanuel movement appears to be developing into, is full of perils to the church as well as to the public welfare generally. Not every clergyman is possessed of proper balance and judgment to go beyond the limits that have usually been set to his functions and the tendency to conscious or unconscious fakerism is likely sooner or later to appear if the practice is to spread. Even with the advice of physicians cooperating with the minister there are dangers. The most fatal form of organic insanity in the active period of life is often indistinguishable in its earlier stages from neurasthenic conditions. Mr. Powell does not seem altogether free from undue credulity. His statement as to the effects of the reading of the twenty-third chapter of Dubois' well-known work seem to us somewhat like evidence of this. His ideas of hypnotism do not appear very well defined, and we are not sure that his methods are not as perilous as other more obviously objectionable ones. His book, therefore, is not altogether a safe one to follow in this regard. What will be the outcome of this Emmanuel movement we are not prophets enough to say; it may do no harm, but it looks to us more perilous to the church than to medicine if it is to be taken up by enthusiastic and more or less credulous clergymen to any very great extent.

Seventh Annual Report of the Director of the Bureau of Science, to the Honorable, the Secretary of the Interior. By Paul C. Freer, Director of the Bureau of Science, for the Year Ending Aug. 1, 1908. Paper. Pp. 79. Manila.

The part of this report of interest to medical men is the space given to the Philippine Medical School. This school is organized with a faculty composed partly of clinical instructors who teach while practicing their profession, partly of men devoting their time exclusively to instruction and research, and of others who belong to the staff of the Bureau of Science, and whose salaries are paid by that bureau. The result is that there is some conflict between the demands made by the school on the one hand and the bureau on the other. The situation is complicated by the fact that the men belonging to the laboratory staff are compelled to give much of their time to clinical work and the organization of the hospital and the school. The report suggests that the government should appoint independent clinical professors who should care for the patients, leaving the laboratory men free to pursue their important investigations. The total number of students in the school is 67. The question of admission requirements is discussed and the fact that the authorities have been quite lenient in applying these requirements is explained by the necessity of providing as soon as possible trained native physicians who will be able to advance the hygienic work in the islands and interpret the requirements of the government to their countrymen with a belief in their necessity. The report emphasizes the necessity of carrying on, in addition to work in Manila, research and practical work in the provinces. For this it is proposed to use the opportunity afforded by the periodic segregation of lepers to be sent to the Culion leper colony. Interesting cases found at these meetings should be brought to Manila for investigation. The other portions of the report are also of considerable interest and show that the worthy standard set by the Philippine Bureau of Science is being maintained.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Iowa: State House, Des Moines, September 21-23. Sec., Dr. Louis A. Thomas.

Missouri: Kansas City, September 20-22. Sec., Dr. J. A. B. Adcock, Warrensburg.

New York: Albany, September 21-24. Chief of Examinations Division, Charles F. Wheelock, Albany.

Massachusetts: State House, Boston, September 14-16. Sec., Dr. Edwin B. Harvey.

The Preparation for the Study of Medicine

An article bearing the above title by Dr. Frederic T. Lewis of Harvard Medical School appears in the *Popular Science Monthly*,[1] and is worthy of careful reading by those having to do with medical education.

Dr. Lewis names subjects which the student during his preliminary college course should take up and gives reasons why they are of importance. The subjects recommended are zoology, botany, chemistry, physics, mathematics, psychology, French and German, English literature and drawing. In zoology, the value of the biologic methods, including dissection and microscopic technic, is emphasized. A table is given based on examinations in anatomy and histology; held by Harvard Medical School for the class which entered in 1907. This table shows that the highest averages were obtained by the students who had previously studied zoology. In botany a study of the morphology of plants with special reference to the fungi is recommended because of the aid it gives in the study of bacteria. The study of flowering plants, however, is not recommended.

The value of the study of chemistry, general and organic, is emphasized because of the aid in the future study of physiology and physiologic chemistry. A college course in physics "with laboratory work consisting of accurate measurements" is recommended as a valuable preparation for the study of physiology and its bearing on numerous problems of medicine. In mathematics, Dr. Lewis shows that plane geometry and plane trigonometry are essential to the securing of the desired preliminary course in physics and that for advanced physics, solid geometry and higher mathematics are needed. A knowledge of psychology is important, particularly in the study of nervous diseases and psychiatry. A half course in psychology, therefore, is recommended.

The reading knowledge of French and German is important in order that the student may benefit from the large number of medical books and periodicals published in those languages and which are invaluable to the student, the practitioner and the investigator. The study of English literature is recommended, not only because of its utilitarian value, but also as a source of recreation and diversion from specialized scientific studies. Drawing is valuable in developing accuracy of observation, since the very act of drawing or modeling an object calls attention to many details otherwise overlooked.

While all this may be secured in two years of collegiate work, it is recommended that students who can possibly do so should take the complete college course before beginning the study of medicine.

South Carolina June Report

Dr. Harry H. Wyman, secretary of the State Board of Medical Examiners, reports the written examination held at Columbia, June 8-10, 1909. The number of subjects examined in was 18; total number of questions asked, 85; percentage required to pass, 75. The total number of candidates examined was 81, of whom 46 passed and 33 failed. One candidate did not complete the examination. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Howard University, Washington	(1909)	79.
Medical College of Georgia	(1909)	75.2, 81.4
Atlanta College of Physicians and Surgeons	(1908)	80.5
University of Maryland	(1907) 85.4; (1908) 75.2, 81.6; (1909)	78.7, 80.2, 82.1, 82.2.
Louisville and Hospital Medical College	(1908)	77.1
Columbia University, College of Phys. and Surg.	(1906)	81.5
North Carolina Medical College	(1909)	76.2, 83.9
Jefferson Medical College	(1908)	84.2
Medical College of the State of South Carolina	(1909)	75, 75, 75, 75.5, 75.6, 75.7, 75.7, 76.9, 78.6, 78.9, 79.4, 80, 80.6, 80.9, 81.5, 82, 82, 82.4, 83.2, 83.9, 84.2, 84.7, 84.9, 87.2.
Meharry Medical College	(1908) 75; (1909)	79.1
Vanderbilt University	(1909)	76.1
University of Nashville	(1909)	75, 81.6
Medical College of Virginia	(1908)	90.9

FAILED

College	Year Grad.	Per Cent.
[illegible]	(1907)	69.3
[illegible] College	(1908)	68.2
[illegible] eorgia	(1906) 63; (1908)	60, 60.9, 62.5, 66.
[illegible] lle	(1908)	71.5
Baltimore Medical College	(1907)	66.
University of Maryland	(1909)	69.4
Leonard Medical School	(1906) 55.5; (1908) 63.8, 73.4; (1909)	63.4.
Medical College of the State of South Carolina	(1904) 58.6; (1907) 63.6; (1908) 22.8, 66.7; (1909)	56.5, 59.6, 64.9, 68.1, 70.2, 71, 71.2, 71.4, 72.1, 72.1.
Meharry Medical College	(1907) 61.1; (1909)	64.1, 65.
University of Nashville	(1909)	68.9
University of the South	(1908)	52.9

Marriages

R. P. Cowles, M.D., to Miss Sarah C. McConville, at Baltimore, August 6.

Otto Fisher, M.D., Trenton, N. J., to Miss Mollie Nash, at Reisterstown, Md., August 14.

Henry Strong Denison, M.D., to Miss Jeannette Welch, both of New London, Conn., August 19.

Giuseppe Previtali, M.D., New York City, to Miss Rose R. Morrow, at Windsor Hills, Md., August 8.

Swithin Chandler, M.D., Philadelphia, Pa., to Miss Elizabeth Dickenson of Middletown, Conn., July 31.

Daniel B. Redmond, M.D. to Miss Eva Fewell, both of Washington, D. C., at Rockville, Md., August 11.

Anthony Gruessner, M.D., New Brunswick, N. J., to Miss Piozsika Deutsch, of New York City, August 14.

Deaths

Walter Gilman Curtis, M.D. Harvard Medical School, Boston, 1846; acting assistant surgeon in the Army before the Civil War, and medical quarantine officer of the Cape Fear river thereafter; state quarantine physician for nearly 30 years; in 1868 clerk of the superior court of Brunswick county, N. C.; and for many years a magistrate and member of the board of county commissioners; died at his home in Southport, N. C., August 8, aged 83.

Henry G. Christzman, M.D. Pennsylvania Medical College, Gettysburg, 1859; surgeon in the Army during the Civil War, and in charge of the Hagerstown (Md.) Hospital during and after the battle of Antietam; for many years a U. S. pension examining surgeon at Washington; ex-president and an honorary member of the Medical Society of Franklin County; died at his home in Welsh Run, Pa., August 10, from paralysis, aged 72.

Byron Clark, M.D. University of Maryland, Baltimore, 1881, College of Physicians and Surgeons, Baltimore, 1881; formerly professor of theory and practice of medicine in the Eclectic Medical College of the City of New York; died at his home in Washington, Pa., August 5, from diabetes, aged 72.

William Smith, M.D. Cleveland Medical College, 1848; Columbus Medical College, 1876; a veteran of the Mexican and Civil Wars; and for many years a member of the American Medical Association; died at his home in Van Wert, Ohio, August 8, from heat exhaustion, aged 87.

James P. Rorex, M.D. University of Alabama, Mobile, 1875; died at his home in Scottsboro, Ala., August 8, from a gunshot wound of the heart, supposedly self-inflicted, while despondent on account of ill-health, aged 64.

John Jacob Beyer, M.D. Jefferson Medical College, Philadelphia, 1890; a member of the Medical Society of the State of Pennsylvania; died at his home in Philadelphia, August 9, from locomotor ataxia, aged 51.

Louis Jacob Eger, M.D. Starling Medical College, Columbus, Ohio, 1893; a specialist on diseases of the eye, ear, nose and throat; died at his home in Delphos, Ohio, August 4, from cerebral meningitis, aged 41.

William Forrester, M.D. University of Louisville (Ky.), 1862; surgeon of the Fifth Kentucky Volunteer Cavalry during the Civil War; died in Louisville, August 15, aged 72.

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[1] July, 1909, p. 65

Stanley Theodore Boggess, M.D. Bellevue Hospital Medical College, New York City, 1891; of Bristol, W. Va.; died in a hospital in Clarksburg, W. Va., August 5, from tetanus, aged 47.

Pleasant James Monroe Burket, M.D. University of Michigan, Ann Arbor, 1865; a veteran of the Civil War; died at his home in Topeka, Kan., July 3, from heart disease, aged 65.

Marcellus M. Adams, M.D. Medical College of Indiana, Indianapolis, 1885; a member of the Indiana State Medical Association; died at his home in Greenfield, August 5, aged 75.

Kent Black, M.D. Medical College of Virginia, Richmond, 1878; a member of the Medical Society of Virginia; died suddenly on his farm near Blacksburg, Va., August 12, aged 53.

William R. Wall, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1887; died suddenly at his home in Willoughby, Ohio, August 7, from cerebral hemorrhage, aged 68.

James C. Harrington, M.D. Cleveland University of Medicine and Surgery, 1865; of Brooklyn, N. Y.; died at the home of his daughter in Bellevue, Pa., July 15, aged 72.

Emanuel A. Smith, M.D. Medical College of Indiana, Indianapolis, 1892; of Newton Stewart, Ind.; died at the home of his brother in Bird's Eye, Ind., July 9, aged 62.

George Washington Hamill, M.D. Bellevue Hospital Medical College, New York City, 1876; of Baltimore, Md.; died at Mercy Hospital in that city, August 13, aged 56.

Samuel W. Yearick (license, Iowa, 1885); an eclectic practitioner of Cedar Rapids; and a veteran of the Civil War; died at his home, July 18, aged 74.

Michael C. Kett, M.D. University of Georgetown, D. C., 1904; of Glenwood Springs, Colo.; was killed August 6, in a runaway accident at that place, aged 30.

Robert Emmett Jones, M.D. Western Reserve University, Cleveland, 1884; died at his home in Bethany, W. Va., August 2, from anemia, aged 59.

John Davis Thornton, M.D. University of Kansas City, Mo., 1887; of Des Moines, Iowa; died in Kansas City, August 2, from brain disease, aged 56.

Marion M. Erwin (license, Ark., 1903); a Confederate veteran, died at his home in Newport, Ark., August, 2, from pneumonia, aged 59.

Thomas Charles Stevenson, M.D. Western Pennsylvania Medical College, Pittsburg, 1893; died at his home in Carnegie, Pa., August 6, aged 42.

Edward Cornet, M.D. National University of Illinois, Chicago, 1892; died at his home in Uncasville, Conn., from paralysis, aged 62.

George W. Baker, an eclectic practitioner of Leon, Iowa; died at his home January 10, from pneumonia, aged 87.

Thomas D. Hulme (license, practitioner, Iowa, 1886); died at his home near Commerce, Iowa, August 8, aged 68.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

Medical and Chirurgical Faculty of Maryland Establishes a Permanent Relief Fund

The July number of the *Bulletin of the Medical and Chirurgical Faculty of Maryland* contains the report of the committee on a fund for the relief of widows and orphans of deceased members, showing the work which has been accomplished during the past year. This fund, established in 1903, has been steadily growing and has recently been considerably enlarged through the organization of the Ladies' Auxiliary. Dr. Eugene F. Cordell, the chairman of the committee, gives the following account of its establishment and activities:

> Several times in the long life of the Faculty, extending back to the eighteenth century, the matter was discussed and at different times resolutions adopted, to carry the plan into execution, but it was not until 1903 that it was successful. At the annual meeting of the Faculty, held in Baltimore in April of that year, a resolution was adopted founding a permanent fund for the relief of the widows and orphans of deceased members. This fund was placed in the hands of the committee to invest and to use the annual interest for the relief of those who might be in need of it. Personal effort was needed to make the project a success. Solicitation among friends and members of the profession secured several hundred dollars within the first year. While the fund has not increased as rapidly as it should, it is growing and is safely invested in 5 per cent. bonds. The goal which the committee has in view is the securing of an amount which will yield an annual income of at least $1,000. There is little doubt that before long, as the charity becomes known and appreciated, gifts and bequests will come in which will make its work an important part of the activities of the Faculty. It is the hope of the committee to establish somewhere near Baltimore a home for the widows and orphans of physicians, where they can be cared for and where the children can be educated. It seemed to the committee that if the women of the Faculty, the wives, sisters, mothers and daughters of the 1,100 members, could be interested in this work, it would be prosecuted with greater success. The recent dedication of the fine new building of the Faculty offered an opportunity to carry this idea into execution. The brilliant opening of May 13-15 drew the community and especially the ladies together, and made them see what a powerful body the medical profession was under its new organization. The local newspapers were full of our career and work and the project was well advertised as a result. Accordingly, a Ladies' Auxiliary of the Widows and Orphans Fund was organized, making the women, in a measure, members of the Faculty. They entered on their work with enthusiasm, a large membership committee having been appointed to secure the membership of all the ladies. In October, an entertainment will be held in Osler Hall, at which reports of the work of the Ladies' Auxilary will be made. A large number of the wives and daughters of members of the Faculty are taking an interest in the plan. It is hoped that eventually a permanent home may be established, which will offer its hospitality not only to the widows and orphans of physicians, but also to the superannuated physicians themselves.

The work outlined above is most commendable, and the result in Maryland will be watched with interest. State associations can well give such a plan careful consideration in selecting possible lines of development.

Society Proceedings

COMING MEETINGS

Amer. Assn. Obstetricians and Gynecologists, Ft. Wayne, Ind., Sept. 2.
Amer. Electrotherapeutic Association, New York, September 14-16.
Colorado State Medical Association, Estes Park, September 19.
Michigan State Medical Society, Kalamazoo, September 15-16.
Missouri Valley, Med. Society of, Council Bluffs, Ia., September 9-10.
New Mexico Medical Society, Roswell, September 15-16.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
Utah State Medical Association, Ogden, September 21-22.
Wyoming State Medical Society, Cheyenne, September 1-2.

OREGON STATE MEDICAL ASSOCIATION

Annual Meeting held at Seattle, July 20-23, 1909

The President, DR. W. H. BYRD, in the Chair

The officers elected were named in THE JOURNAL, Aug. 7, 1909, p. 467.

The report of the secretary showed a membership of 371. This included one new society, the Polk-Yamhill, of which Dr. W. G. Gilstrap is president and Dr. L. A. Bollman, secretary. The state association granted a charter to this society.

Practice Act Discussed

The Committee on Public Policy and Legislation endorsed a plan for the consideration of a practice act, as a special order of business for the next meeting. The model bill presented in the state legislature at the last session had been defeated, and it was with a view to passing this that the motion was made. The bill was widely discussed at the meeting.

Ophthalmia Neonatorum

DR. J. F. DICKSON, the Oregon representative of the committee on Ophthalmia Neonatorum of the American Medical Association, urged the appointment of a special committee of three to secure the passage of a bill regulating the practice of physicians and midwives in the care of new-born infants. The matter was referred to the Committee on Public Policy and Legislation, who will be urged to adopt the plan.

Official Journal Considered

The important business of the session was the adoption of an official journal. The Committee on Journal, Drs. W. T. Williamson, C. J. Smith and K. A. J. Mackenzie, appointed last year to consider the best methods of publication, endorsed a plan for the formation of a Northwest Publishing Association and presented articles of incorporation, constitution and by-laws. *Northwest Medicine*, published at Seattle, and for several years official journal of the Washington State Medical Association, had offered to lease its plant to the states entering into the agreement, and it was recommended that this journal be made the official organ of the states of the Pacific Northwest. According to the plan recommended each state medical association will elect three trustees, and the trustees from all the states will elect an editor-in-chief and managing editor, forming a publishing company to be known as the "Pacific Northwest Publishing Association." Each state will have two associate editors and the state secretaries will become assistant editors *ex-officio*.

The journal will continue to be known as *Northwest Medicine*, and will be furnished to each member by the state associations. As at present arranged, the new publication will prove a most desirable one. The Oregon State Medical Association adopted the plan, as did also the Washington State Medical Association. Idaho is expected to do likewise, and it is hoped that British Columbia willl join in the plan. Much satisfaction is being expressed by physicians of the Northwest, who thoroughly approve the arrangement, which will go into effect immediately.

Report of Delegate to American Medical Association

The delegate to the American Medical Association, Dr. A. C. Smith, reported the results of his observations while attending the last meeting of the American Medical Association. He made a motion that the next delegate from the Oregon State Medical Association be instructed to promote legislation tending to carry out the suggestions of President Burrell advising the segregation of the three offices of secretaryship, managership and editorship of The Journal of the American Medical Association, and that he also be instructed to initiate or support any action tending toward the restriction of the term of office of the members of the Board of Trustees to one term. This motion was carried.

Northwest District Association Formed

The chairman appointed a committee of three, Drs. N. Moliter, La Grande, W. G. Gilstrap, Sheridan, and W. T. Williamson, Portland, to consider the advisability of forming a northwest association comprising Oregon, Washington, British Columbia and Idaho. The project was favorably reported and organization effected (as already noted in The Journal).

The three journal trustee nominees, Drs. W. T. Williamson, C. J. Smith and K. A. J. MacKenzie, were elected unanimously to serve in order named for one, two and three years respectively.

The next place of meeting will be Portland, Oregon, in 1910.

NEW JERSEY STATE MEDICAL SOCIETY

Annual Meeting held at Cape May, June 23-25, 1909

(Concluded from page 650)

Medical Expert Testimony

Dr. T. P. Prout, Summit, protested against the present methods of judicial procedure, and said that unless one's knowledge dated from the seventeenth century, one was of very little importance in a court of law. The venerable question always propounded whenever insanity was in question ignored completely the advances that had taken place in two centuries of medical practice. The slow administration of justice was a characteristic of bad civilization; for it meant a costly administration. He did not consider our penal system adapted to cure criminals, who were always abnormal. He hoped that the day might come when an improvement would be made in the present legal system, and the prison would become the laboratory of an active science of jurisprudence. He stated that any three physicians who had had training in a certain department would be able to come to an agreement, provided they had access to all the facts, and suggested a plan by which the medical experts should be appointed in such a way as not to be bound to testify in favor of one side or the other.

DISCUSSION

Dr. Britton D. Evans, Graystone Park, said that medical experts could not be criticised for not always being harmonious, as the eminent men who had just spoken on the subject of obstetrics did not seem to be by any means altogether agreed. He stated that the objection to changing the system of employing medical expert witnesses was that the Constitution of the United States guaranteed to an accused citizen the right to summon experts from anywhere who would tend to help his cause. Men appointed as experts with a life tenure would not always agree. That a life tenure did not insure agreement had been shown by the Dred Scott decision.

Dr. E. Ill thought that when the day came that there would be no difference of opinion among physicians, there would be no physical body. He said that Dr. Prout's paper should be widely circulated among medical men, so that honest members of the profession might endeavor to have revised this cumbersome machinery of the law. He believed that if the asking of hypothetical questions could be abolished, this would constitute a long step in the right direction. He stated that no countries except Great Britain and the United States allow witnesses to be insulted by the attorneys without rebuke.

Pathognomonic Signs Relating to Appendix Localization

Dr. A. J. Walschied, Union Hill, stated that besides pain, muscular rigidity, tenderness, tumor, etc., there were a number of signs that, if carefully studied, could localize the appendix, its direction and, in a great many instances, its pathologic state and prognosis. He considered the normal position of the appendix, and how it could be placed in these various positions. The positions of the appendix, he said, were: (1) the intrapelvic, with the development of the bladder, rectal, and uterine adnexa symptoms; (2) near the iliopsoas muscles, producing leg symptoms; (3) the position upward, outward, and backward, producing lumbar pains in chronic cases; and (4) upward and inward, or under the liver, producing respiratory symptoms. He touched on the importance of pain in relation to localization, particularly in outward and upward locations, or in inward, pointing toward the median line. Tenderness, as an important factor in localization, was also referred to; as well as the significance of McBurney's point, in making a fine diagnosis of the position and condition of the appendix. The importance of gastrointestinal disturbances was next described. Pain and tenderness he considered of value in showing the degree of inflammation.

DISCUSSION

Dr. George W. J. Sommers, Trenton, said that the diagnosis in most cases depended on the position occupied by the appendix. Those in which the tip pointed toward the other side of the colon were favorable for operation; while those in which it turned inward were more serious. He considered a study of the blood count an aid in the diagnosis of appendicitis, particularly a differential leucocyte count. He thought that the patients should be operated on as soon as the diagnosis was made, and considered a dose of castor oil a very good temporary expedient in cases of doubt. He believed, also, in the starvation plan of treatment in so-called inoperative cases. He had seen patients thus treated live long enough to be operated on successfully at a subsequent time.

Dr. Theodore Senseman, Atlantic City, did not believe the location of the direction in which the appendix pointed to be of any practical value. He thought that the first twenty-four hours in an appendix case would be better consumed in getting the patient ready to be operated on than in taking a leucocyte count. If one found the base of the appendix, it was easy enough to reach the tip.

Dr. J. M. Rector, Jersey City, referred to cases in which the appendix is sympathetically connected with the uterine adnexa, primary inflammatory changes in one of these being associated with secondary inflammatory changes in the other.

Dr. Walschied said that it was difficult sometimes to convince people of the necessity of early operation in appendicitis; and that in such cases one could wait and see whether, at the end of twenty-four hours, the acute pain was still present, meanwhile making the blood count and giving large doses of castor oil. While he admitted that the location of the tip of the appendix was not important to the general practitioner, he thought it very advantageous for the surgeon to know it.

Sterilization of Confirmed Criminals, Idiots, and Other Defectives by Vasectomy

Dr. William J. Chandler, South Orange, said that students in sociology had called attention to the fact that the birth rate of the criminal and defective classes was increasing much more rapidly than that of intelligent and law-abiding citizens. This was probably because these defectives had no sense of responsibility, and sought only the gratification of their animal natures. He referred to the famous Jukes family of criminals, prostitutes, vagabonds and paupers, to support the view that crime was hereditary. Society had sought to protect itself against the increasing number of criminals and defectives by passing punitive laws and by maintaining institutions for such persons. This had entailed considerable expense on the community, and had not been particularly successful. Some states had forbidden the marriage of persons who were epileptic, imbecile, feeble-minded, or afflicted with insanity; but, unfortunately, the race could be propagated without marriage. Segregation or colonization was costly, and deprived many otherwise useful citizens of their liberty. Castration unsexed the individual; and, while advisable as an additional punishment for a limited number of criminals, was objectionable as a general measure. Vasectomy, however, was simple, safe, and thoroughly efficient. It would prevent propagation without unsexing the individual. Dr. Harry C. Sharp, of Indianapolis, for a long time chief physician of the Indiana State Reformatory, had done many hundreds of these operations, and stated that it in no manner limits the marital relations, except in the prevention of procreation. Indiana and several other states have passed laws making it compulsory for unimprovable defectives to submit to this operation.

DISCUSSION

Dr. Chandler offered a resolution that a committee be named to prepare a bill on the lines of the Indiana law, and to present it at the next meeting of the Legislature.

Dr. George H. Balleray, Paterson, said that we were what we were in consequence of heredity and environment. Therefore, the propagation of the human race should not be left entirely to chance. In the breeding of the lower animals, great precautions were taken to improve the stock and to prevent crossing with inferior animals. This was not so with humanity, and the result was often a progeny that was a disgrace. One of the measures that Dr. Balleray thought would be beneficial in this respect was the control of immigration. There were laws in existence supposed to do this, but they were not enforced. Dr. Balleray said that at present there were no especial means of preventing the marriage of the unfit. He thought that a law regulating this should be passed in every state, and that the applicant for matrimony should be made to pass an examination as severe as that required now of an applicant for life insurance. He thought that it should not be vasectomy, but castration that should be performed.

Dr. Prout said that the procedure should be undertaken with some trepidation, because not much was yet known concerning the ultimate effects of vasectomy. He thought that the performance of the operation on criminals would place them in a position of absolute irresponsibility; and that to allow them their liberty would cause a good deal of trouble.

Dr. D. E. English thought that the criminals were about as irresponsible now as they could be. He was not in favor of the operation for females, as it is more serious in them than in males. He believed that very few prostitutes had children.

Dr. Cornell did not think that the law in Kansas prohibiting the marriage of degenerate and unfit persons could have a fair trial until other surrounding states passed similar laws; as people who wished to be married needed only to step across the border. He said that the fact that some criminals had stated that they felt better after the operation of vasectomy did not prove it to be a good thing. He considered that the results given by Dr. Chandler lacked the accuracy of scientific verification.

Dr. D. C. English made a motion that a special committee, consisting of Drs. Chandler, Balleray and Prout, be appointed, and that the recommendation contained in Dr. Chandler's paper be referred to this committee with power to prepare a bill and have it introduced at the next session of the Legislature. His motion was seconded and carried; and the committee was appointed. He did not think that the procedure should be regarded entirely as a punitive measure, as many of these persons were not criminals. If they could be put into a safer and better condition by vasectomy, he thought it was well to employ it. These people were not more irresponsible after the operation than before, and were better able to restrain themselves. No harm had been observed in either women or men as the result of the operation.

Dr. Balleray was willing that vasectomy should be performed on the feeble-minded, but felt that to remove the testicles of criminals would have a great deterrent effect.

Dr. Chandler said that he had recommended castration for a certain class of criminals.

Mental Hygiene and Prophylaxis

Dr. Henry A. Cotton, Trenton, reviewed the recent advances in the study of psychiatry and in the care and treatment of patients in insane hospitals, and said that not only in prophylaxis, but also in the after-treatment of patients who leave the hospital, the physician had an important field. There were a great many preventable forms of insanity, alcoholics making 20 per cent. of the admissions and 10 per cent. more being cases of general paralysis due to syphilis. These, with other indirect causes of insanity, would run the estimate up to 50 per cent. of cases of insanity that were entirely preventable. He regretted that the New Jersey law did not provide for voluntary commitment, and hoped that this defect would be remedied at the next session of the legislature. He thought that the care of the acute insane should not be entrusted to a layman, no matter how good. He believed that the counsel of the family physician would often be of value in so directing the life of his patient as to prevent the development of insanity.

Dr. Prout emphasized the upbringing of children as an element in the prophylaxis. He thought that obedience and imagination were both parts of the character sadly neglected in the training of children in the United States. This he considered a serious defect, and one that would lay the foundation for an unstable equilibrium in the mind of the individual.

Dr. Alexander Marcy, Jr., Riverton, thought that institutions for the insane should be under the care of men thoroughly trained in this particular specialty. He thought that Dr. Cotton would not have gone far wrong if he had said that 75 per cent. of the cases of insanity are directly due to alcohol. He believed in a sharp differentation between the acute and curable insane and the chronic and incurable. He thought that the county institutions should take care of the latter, but that the state should take charge of the former, separating them from the chronic cases. He thought that the acute cases needed the most careful, painstaking, and thorough investigation. He believed that the stigmata of insanity were often implanted in the offspring of the degenerate, and considered the two questions closely allied.

Dr. Parsons said that the county asylum did care for the acute cases; and that chronic cases required much more care than the acute. He thought Dr. Marcy was discriminating too much in favor of one class at the expense of the other.

Dr. Luther M. Halsey, Williamstown, said that at the present day institutions for the insane were no longer regarded as asylums, but were looked on as hospitals. Daily staff consultations were held, and the management of the different cases discussed. He thought it almost impossible to get a lay superintendent capable of managing a county insane institution properly, and thought that politics was very likely to creep into the matter. He was in favor of a closer relation between the hospital physician and the general practitioner.

Dr. Cotton did not think that every patient who had been in the state hospital for five years should be sent back to the county institution, as in a good many chronic cases the patients were violent and hard to manage. When they reached a stage of quiet dementia, they could be taught farming and housework. He thought that the physicians in county asylums worked under a great disadvantage, as they could not always get the superintendent to do what they wished.

The Supernutritive Properties of Milk

Dr. Alexander McAlister, Camden, said that cows' milk was ideal only for calves, although there was less danger in feeding a child with cows' milk than with that of any other animals. The fetus was nourished before birth by the blood, and afterward by milk, which was the nearest thing to blood. Milk was now regarded as a collection of living cells suspended in serum. These cells were nearly related to the white blood corpuscles. The valuable supernutritive properties were found only in whole milk. Milk that was not definitely known to be good and new should not be endorsed by physicians for nursery and clinical use. It was almost always possible in this country to get milk containing 100 per cent. of economic goodness. The place that could not command good milk for its infants and invalids should be held up to ridicule.

At What Age should a Child be Admitted to our Public Schools?

Dr. Joseph Funk, Elizabeth, said that the law of New Jersey permitted children to be sent to school at the age of 5 years. He considered this far too young, as mental development could not be expected until the child had laid the foundation for a good physical development. At 5, they were too young to concentrate their minds, and even tired of play very quickly. He thought no child should be sent to school until 7 years old, and that during the first two years after this the school hours should be short. A great deal of the school time should be spent in the open air.

DISCUSSION

Dr. Marcy said that he wished to emphasize the points of shortening the school year, limiting the hours of confinement, attending more thoroughly to the physical and moral development, and allowing the mental development largely to take care of itself.

Dr. Elias J. Marsh, Paterson, said that classes often had to be put on half time because school accommodations were insufficient. He suggested that the financial problem could be solved by having the children spend a large part of their time out of doors during school hours, using the ground around school houses for the purpose of conducting their exercises in for part of the day.

Dr. Henry L. Coit, Newark, considered it a mistake to send a child to school before the age of 8, the period between 5 and 8 being that of most critical development for the nervous system and in which it gained its greatest strength.

Dr. Livengood said that there were too many studies in the public schools, and that the subjects were often too abstruse for the minds of the children. Even if the school hours were shorter, it would take all the pupils' spare time to prepare lessons. If the schools could be taken out of politics, he thought that radical changes in the right direction could be made.

Dr. Chavanne did not approve of the manner in which children were stuffed with information, and said that much of the knowledge thus acquired was of no subsequent use.

Dr. Linn Emerson, Orange, said that children would readily acquire, in a short time, and without much waste of energy, what it would have required tremendous efforts on the part of the teachers to pound into their heads between the ages of 5 and 7. He thought that the child who began to go to school at the age of 8 years would be better grounded at the age of 12 than the child who had gone to school since the age of 5.

Dr. Cornell said that the teachers were powerless to change the course, unless backed up by the medical profession. They had to be governed by those higher in authority. He thought that if the New Jersey Medical Society would take some action regarding the matter, other state societies would follow its lead.

Dr. Marcy offered a resolution that a committee of three be appointed to consider the subject of the school life of children, to report at the next meeting of the New Jersey Medical Society, and to make monthly reports of progress in the journal of the Society. The motion was seconded and carried.

Points in Infant Feeding

Dr. D. E. English, Milburn, was the author of this paper; but, he having been called home, the paper was read by Dr. D. C. English.

Efforts should be directed, not to making a perfect imitation of mothers' milk, but to obtain a food that suits the infant. No exact rules as to quantity can be laid down. Rules are based on the supposed capacity of the infant's stomach at different ages, and this is a most uncertain and variable criterion. If the child shows a normal increase in length and weight, it must be getting a proper amount of food. Lack of this increase is more often due to the quality than to the quantity of the food. In hot weather, one should be content if the child keeps well, and not insist on an increase in weight and length up to the full amount. The child requires a larger quantity of cows' milk than of breast milk. It is wrong to wake a child and insist on its swallowing a certain amount of food at a particular time. An infant should never be fed when it is not hungry. The child should be allowed to worry a while before each feeding. Occasional crying is the only form of physical exercise that a young infant can get. One should try to make the baby continue feeding until its stomach is full and distended. It is this distention that develops the stomach. It will not produce dilation, which is caused by feeding the child too frequently and not allowing the stomach to become entirely empty. After feeding, the baby should sleep. In regulating the time of feeding, one should not pay attention to the clock, but should watch the baby. The intervals will then tend to approximate those given in the text-books, but will be more irregular. By the age of 18 or 20 months, the feedings can be reduced to three good meals a day with something in between meals.

DISCUSSION

Dr. Francis E. Todd, Paterson, believed in putting the normal baby with a normal mother on the breast as soon as convenient after delivery. He was accustomed to allow the infant to nurse every six hours in the interval between delivery and that of free lactation. He considered the first secretions from the breast necessary to the child, clearing out its intestinal tract and leaving it in condition to take the pure milk of lactation. He thought the child could get almost enough water from the breast, but said that any water given it should be sterile. He preferred to have this given after nursing, instead of before. Breast-fed babies require less attention to their mouths than do bottle-fed babies. He thought that regular nursing brought about regular habits and made the child easier to care for. In mixed feeding, he would allow the child to get all the milk it could from the breast before giving it the bottle. Strong efforts should be made to secure certified or pure milk. He doubted whether the removal of a little of the cream from the top of the bottle would remove enough bacteria to make the procedure worth while. He thought that Dr. English gave the fruit juices a little earlier than necessary, and said that six or seven months was early enough for this. He thought milk formulas too weak, as a rule.

Dr. Livengood said that the child's toys should be sterilized; and that, when placed on the floor, a sterile sheet should be put over the carpet.

Ophthalmia Neonatorum

Dr. T. R. Pagnelli, Hoboken, divided the disease into two forms, gonorrheal and non-gonorrheal, and said that the prognosis was better in the latter than in the former, but that the treatment was similar. Infection usually took place just before or just after the head passed the vagina. If the disease developed later than the fifth day, the disease must have been contracted from outside sources. The diagnosis should present no great difficulty. The prognosis depended on the bacterial cause, the size of the fissure, the stage of the disease, and the nutrition of the infant. Various silver preparations were used in the treatment, and several different acids. The best method was that of Credé, which consists in instilling a drop or two of silver nitrate into the eyes of the new-born child after the lids have been cleaned.

DISCUSSION

Dr. Norton L. Wilson, Elizabeth, had seen far fewer cases in the last eight years than formerly, and believed this to be due to the use of the Credé method of treatment, particularly in institutions. He did not, however, recommend that this method should be employed in every case in private practice. He thought that in non-specific cases the eyes would get well in most instances, whether any treatment were employed or not, provided they were kept clean. Even specific cases would do much better if the eye were frequently and thoroughly flushed. He did not favor the application of continuous cold to the eyes, as he had seen much harm result from it. He preferred nitrate of silver to either argyrol or protargol.

Dr. Emerson's experience with argyrol and protargol had been more satisfactory than that of Dr. Wilson. He believed that in many cases physicians were not explicit enough in giving directions about cleaning the eyes at certain intervals. They should give a demonstration to the one having charge of this of the manner in which it was to be done. He preferred to give a weaker solution to the mother or nurse to instil, and to use the stronger nitrate of silver himself.

Dr. Pagnelli said that if the patient were under the constant observation of the physician, the latter would be pretty well guided regarding any complications arising in the case.

Report on Recent Milk-Commission Legislation

Dr. Henry L. Coit, Newark, said that he was a member of a committee appointed twenty years ago, and never discharged, to attend to the subject of obtaining pure milk. This was the pioneer step in this direction. He said that an act had been passed by the New Jersey Legislature of 1909 conferring on the milk commission a legal status, and that it was the most comprehensive law on the subject ever placed on the statute books.

It was moved, seconded, and carried that the report be received, and that the committee be discharged with the usual pension of thanks of the society.

Medicolegal

Validity of Claims of Physicians for Making an Autopsy

The Supreme Court of Arkansas says, in Clay County vs. Thornton and another, that the latter parties, two physicians, filed claims of $25 each for professional services rendered in making an autopsy at the direction of a justice of the peace, acting in the absence of the regular coroner, who resided more than twenty miles from the place where the death of the subject occurred. On behalf of the county it was said, in opposition to the claims, that the jurors were not sworn in the immediate presence of the dead body, as is contemplated by the Arkansas statute, and that they did not together view the dead body before holding the inquest, as provided by the law, and because of the failure of the acting coroner to comply with the literal terms of the statute in this respect it was contended that the allowance to the physicians for making the autopsy was not valid. But the court does not agree with that. As it views it, this was a matter of procedure that addressed itself to the acting coroner and did not render an act done by the physician in good faith under the direction of the acting coroner unlawful.

It was also contended that the acting coroner exceeded his powers in employing and directing more than one physician to make the autopsy, and that, on that account, the county was not liable. The presiding judge, however, found from the evidence that the services of the two physicians were necessary to ascertain whether the circumstances of the death of the young woman indicated that she had been foully dealt with, and that the fees charged were reasonable. This being so, and the findings and judgment of the lower court, allowing the claims, being sustained by evidence legally sufficient, the supreme court affirms that judgment in the physicians' favor.

What Physicians May and May Not Testify to Involving Range of Bullets

The Criminal Court of Appeals of Oklahoma says, in Price vs. United States, that it was entirely proper for a physician to describe fully the location, character, and range of a bullet wound. But it was error, the court holds, to allow physicians to testify to their opinions as experts as to the position of the arm of the person shot at the time he received the fatal wound based on the range of the bullet after it entered his body. Medical science does not undertake to decide what range a bullet, fired from a gun or pistol, will take after coming in contact with, or entering, the human body. The reports of army surgeons and of army hospitals prove that there is no rule on this subject. They present the most astonishing, contradictory, and apparently impossible results. Therefore it has been uniformly held by the courts that this is not a proper subject for expert evidence. From this it necessarily follows that a physician should not be permitted to testify as an expert to the position of the body of a person when a wound was received, based on the range of the bullet after it entered his body.

Privilege in Case of Communications Made in Presence of Third Persons

The Appellate Court of Indiana, Division No. 1, says, in Indiana Union Traction Co. vs. Thomas, a personal injury case brought by the latter party, that the plaintiff testified as a witness in her own behalf and in the course of her examination in chief testified to services rendered to her immediately after the injury by a certain physician. On her cross-examination it was sought to ask her whether, on the day of the injury, she made certain statements descriptive of the manner in which the injury occurred, to her said physician, at the residence of, and in the presence of, her daughter, and in the presence of another woman. Objections to these questions were properly sustained. The statements about which the inquiries were made were in the nature of privileged communications to a physician within the intent of the Indiana statute. Without the consent of the patient the physician could not testify to such statements made by the patient, and the patient herself could not be compelled to divulge communications between her and her physician. The privilege attaches, notwithstanding the presence of third persons: and, while as to such a communication made in the presence of others, and such other persons be not necessary to enable the patient and the physician to communicate with each other, such third persons may be admitted to testify concerning the communcation, yet the privilege still exists so far as to exclude the testimony of the physician, and the patient as well, from divulging such communication as a witness.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

August 14

1 *Technical Difficulties in the Distention Method for Hypospadias and Other Urethral Affections. C. Beck, New York.
2 *Anatomic and Clinical Relations of the Sphenopalatine (Meck- [illegible] Nose and Its Accessory Sinuses. G. [illegible]
3 *N[illegible] Preservation of a Constant Tempera- [illegible] for Rectal Irrigation or Infusions. [illegible] k.
4 *Cl[illegible] monary Tuberculosis. J. A. Miller, New York.
5 *Presence of Tubercle Bacilli in the Urine of Tuberculous Patients, Its Significance and Dangers. E. J. G. Beardsley, Philadelphia.
6 The Analogy of Migraine to Rheumatism. I N. Cohen. Brooklyn.
7 Inflammation of the Verumontanum. J. A. Hawkins. Pittsburg.
8 *Error in Diagnosis Maintained by Microscopic Examination. C. J. Koenig, Paris, France.
9 Interesting Case of Double Uterus. J. A. Campbell, New York.

1. **Urethral Affections.**—Beck reviews his experience in those cases of urethral malformations, defects, deformities and injuries, which he has treated by urethral distention within the last nine years. So far as failures of the distention method are concerned, it seems to Beck that they are more due to the hand than to the method itself. The most frequent mistake made is that the urethra is not sufficiently mobilized. The method has yielded extremely gratifying results in Beck's work.

2. **Sphenopalatine Ganglion.**—Meckel's ganglion is in quite as close relation to the nose and its accessory sinuses as is the optic nerve. It has long been recognized that inflammatory processes in the sphenoidal, postethmoidal and maxillary sinuses extend to the optic nerve, and the fact has been demonstrated postmortem (Birsch-Hirschfeld). It is therefore altogether reasonable to assume, Sluder says, that these processes also pass over to Meckel's ganglion, although the clinical picture is very much less striking than the blindness produced by involvement of the optic nerve. According to his observations, characteristic disturbances have followed postethmoidal and sphenoidal suppurative inflammations which can not be explained otherwise than by assuming that Meckel's ganglion has become involved by extension; some of these disturbances have been transitory, and some have persisted for many years. In other cases the conviction has been equally positive that the extension has been from the nose proper. Thus far he has not seen anything that could be interpreted as an extension from the maxillary sinus. From the anatomic relations of Meckel's ganglion to the anterior boundary of the pterygopalatine fossa, i. e., to the posterior wall of the maxillary sinus, it is not very likely to be involved by extension of an inflammatory process from that sinus, inasmuch as the arteria palatina descendens and the arteria sphenopalatina, together with their accompanying veins and the surrounding connective tissue, lie between the ganglion behind, and the wall of the maxillary sinus in front. This relation appears to be constant; and Sluder believes that it explains why clinical manifestations referable to the ganglion do not ordinarily follow inflammatory processes in the maxillary sinus.

3. **Rectal Irrigation.**—Kemp employs a vacuum bottle with a specially devised attachment. Through the screw cap which closes the bottle, passes a small hard rubber (non-heat-conducting tube), to which is attached the outflow tube. Parallel to this is a filiform tube which allows the entrance of a fine column of air so as to render the flow possible. This last tube passes through the solution to within about one-eighth of an inch from the bottom of the bottle. As the instrument is employed inverted, it would correspond to the same distance from the top of the bottle. This filiform tube is of hard rubber externally where exposed to the air as a non-conductor of heat. The part lying within the bottle is purposely made of metal so that it is rapidly heated by the surrounding solution and the entering air is thus in turn heated markedly. A series of experiments demonstrated that there is only a loss of from 1 to 2 F. in the temperature of the solution in the bottle during the administration of proctoclysis (the drop method) lasting half an hour, a negligible amount. A screw compression valve is applied close to the bottle attachment so as to avoid as much as possible the solution cooling in the soft outflow tube. This outflow tube is joined to the catheter by a short piece of glass tubing for the purpose of observing whether the flow is constant. The catheter for rectal injection passes through a self-retaining rectal tip and the former can be inserted to any length desired. Asbestos ribbon is wound about the conducting tube from its junction at the bottle to the catheter. This lessens dissipation of heat and obviates the use of hot-water towels.

4. **Pulmonary Tuberculosis.**—Miller places special emphasis on the following points: The attitude of every physician toward tuberculosis should be that of constant suspicion. The history of intimate exposure to infection and a detailed inquiry into previous illnesses are of the greatest importance. A properly conducted physical examination is the cornerstone of the diagnosis, but physical signs of tuberculous toxemia are quite as important as are the signs in the lungs. Prolonged and repeated examinations are often essential. Failure to find the tubercle bacilli in the sputum and other excretions is evidence of little value. The tuberculin tests are valuable in connection with the clinical manifestations, but their exact significance is not yet absolutely determined. In general, the diagnosis is based on no one symptom, sign, or test, but on a careful correlation of all the evidence into a rational clinical picture.

5. **Tubercle Bacilli in Urine.**—Beardsley found that acid-fast and alcohol-fast bacilli are frequently present in the urine of tuberculous patients. He says that such bacilli have been proved in many instances to be capable of producing tuberculosis in animals, and, until it is conclusively proved that these bacilli are not virulent it is wise to consider all of them virulent. It is reasonable to believe that in tuberculosis tubercle bacilli are present, at times, in the blood of the individual. Tubercle bacilli may be present in the urine without a macroscopic lesion of the genitourinary organs. Although inoculation experiments are absolutely necessary to conclusively prove that a germ found in the urine is the specific bacillus of tuberculosis, nevertheless a bacillus that retains the carbol-fuchsin stain after thorough decolorization with Pappenheim's solution is likely to be the tubercle bacillus. Beardsley emphasizes that disinfection of the urine and feces of tuberculous patients is required to free them from danger of transmission of the disease to others.

8. **Error in Diagnosis.**—Koenig cites a case in which a serious affection of the throat and of the whole organism was not recognized on account of the resemblance, or rather non-resemblance, which exists microscopically between the *Spirochæta pallida* of Schaudinn and the spirillum of Vincent.

Medical Record, New York

August 14

10 Military Obligations of the Medical Profession. J. R. Kean, U. S. Army.
11 Features of the Medical Department of the Navy in Peace and War. C. F. Stokes, U. S. Navy.
12 The National Guard Surgeon. W. G. Le Boutillier, New York.
13 The Hygiene of the Regiment. H. Brooks, New York.
14 Instruction of the Hospital Corps. E. P. Fowler, New York.
15 *Medical Education in France and Germany. E. St. Jacques, Montreal, Canada.
16 Traumatic Hysteria in Its Relation to Surgery. B. C. Loveland, Syracuse, N. Y.
17 *Hygiene of the Air Passages. A. B. Judson, New York.
18 Skin Disinfection with Iodin in Abdominal and Other Operations. C. Jewett, Brooklyn.

15. **Medical Education in France and Germany.**—St. Jacques says that in Germany laboratories are numerous and better equipped, and research work is extensively carried on. Clinical facilities are greater in France. Paris excels in skin, nervous and genitourinary diseases, in surgery and bacteriology. Postgraduate work is more practically organized in Germany.

17. **Hygiene of Air Passages.**—Judson draws attention to the fact that coughing, sneezing and blowing the nose do not relieve the subject, but that by increasing the congestion and irritation of the air passages they increase the condition which the patient seeks to relieve. By proper control of these things suffering will be lessened.

Boston Medical and Surgical Journal

August 12

19 *Problem of Cancer Considered from the Standpoint of Immunity. F. P. Gay, Boston.
20 Importance of Active Muscular Exercise in Restoration of Function. C. H. Bucholz, Boston.
21 **Acute Postoperative Dilatation of the Stomach.* J. R. Torbert, Boston.
22 *Congenital Imperforation of the Esophagus with Tracheo-esophageal Fistula. A. R. Robertson, Boston.
23 Thrombosis of the Left Femoral Artery. C. S. Walker, Keene, N. H.

19. **Cancer Immunity.**—Gay claims that it is justifiable to regard the pre-metastatic period of a tumor as a period during which the animal shows reaction products to cancer tissue, and during which period the animal is able successfully to combat a generalized infection of the cancer. In those cases in which spontaneous resorption of the tumors occurs, which are relatively frequent in animals and have also been described in human beings, it may be supposed that the resistance of the individual has succeeded in overcoming the cancer. From experiments carried out by Gay in animals, it would seem possible that during this pre-metastatic reaction

period, the resistance of the individual may be increased by re-inoculation of the tumor, or possibly of products of the tumor, to such an extent that the resorption of the original tumor may be brought about.

21. Postoperative Dilatation of Stomach.—Torbert points out that acute postoperative dilatation of the stomach is not so rare as the literature would lead one to believe. The diagnosis can usually be made by having the subject in mind, especially when we have the presence of distention, vomiting of large amounts of brownish-green fluid, no necessary rise in temperature, rapid pulse and a rapidly increasing collapse. The passage of the stomach tube will usually establish the diagnosis. According to reported cases, the condition is very fatal, Laffer stating that 63.5 per cent. of those affected die. When the condition is recognized early, however, most of the patients respond well to treatment, the high mortality figures being probably due either to a late diagnosis or to a complete failure in recognizing the condition. The importance of the stomach tube as a part of an operation outfit is emphasized by the existence of this comparatively recently recognized condition.

22. Esophageal Malformations.—Robertson cites a case in which the esophagus consisted of two distinct portions entirely separated from one another. The upper portion opened normally above into the pharynx, but below it ended in a blind cul-de-sac, the lowest portion of which was 1.4 c.c. above the tracheal bifurcation. The lumen was about uniform throughout; the thickness of the wall increased slightly toward the lower end. The mucous membrane was pale, smooth and slightly thrown into folds. The lower moiety was in all respects smaller than the upper part. Below it opened normally into the stomach, but above it formed a fistulous communication with the posterior wall of the trachea at a point 8.4 mm. above the bifurcation and 6 mm. below the pouch-like end of the upper part. The mucous membrane was smooth and pale. The pylorus was freely patent, measuring 15 mm. in circumference. The mucous membrane of the stomach and intestines was smooth and pale.

Lancet-Clinic, Cincinnati

August 7

24 The Blood Vessels in Fused (Horseshoe) Kidney. B. Robinson, Chicago.
25 General Peritonitis as a Complication of Appendicitis; Report of Case. J. N. Ellison, Sardinia, Ohio.
26 *New Method of Inducing Local Anesthesia. J. L. Ransohoff, Cincinnati.

26. New Method for Inducing Local Anesthesia.—Ransohoff publishes a case preliminary to a series of experiments on a new method of local anesthesia—that is, by injecting a mild cocain solution directly into the artery supplying the part to be anesthetized. The patient had been suffering for three years from a chronic osteomyelitis of the hand, which became so painful as to necessitate amputation. His age and condition contraindicated general anesthesia. An Esmarch bandage was applied about the arm two inches below the insertion of the deltoid. Under infiltration anesthesia the brachial artery was exposed and the needle of a hypodermic syringe inserted into its lumen, and 1 c.c. of a 2 per cent. cocain solution injected into the artery in the direction of the blood current. After a lapse of two minutes the anesthesia was absolute, and an antebrachial amputation was done entirely without the knowledge of the patient.

Northwestern Lancet, Minneapolis

July 15

27 Congenital Syphilis. F. R. Wright, Minneapolis.
28 Stomach Pains. W. Zweig, Vienna, Austria.
29 Irregular Ethics, Grafts, and Frauds in the Profession. J. A. Hohf, Tripp, S. D.
30 Hernia. N. L. Werner, Red Wing, Minn.
31 Medicine in Edinburgh. G. D. Head, Minneapolis.

Virginia Medical Semi-Monthly, Richmond

July 23

32 *Influence of Sleep on Arteriosclerosis. W. W. Beveridge, Asbury Park, N. J.
33 Surgical Diseases of the Kidney. J. G. Sherrill, Louisville, Ky.
34 Surgery of the Peripheral Nerves. J. S. Horseley, Richmond, Va.
35 Frigidity from the Sociologic and Gynecologic Viewpoint. C. M. Strong, Charlotte, N. C.
36 Dead Fetus Seven Months: Complete Placenta Prævia Associated with Round Worms. J. W. McGehee, Reidsville, N. C.

32. Abstracted in THE JOURNAL, July 31, 1909, p. 401.

Medical Fortnightly, St. Louis

July 26

37 Touring Lands Where Medical Science Evolved. R. G. Eccles, Brooklyn
38 Toxicology of Tobacco Smoke. A. A. Robinson, Ogden, Utah.
39 The Reading of Prescriptions—Of Interest to the Physician, the Pharmacist and the Layman. J. F. Chandler, Forest City, Mo.
40 Directions for Preoperative and Postoperative Treatment of Peritonotomy for Nurses and Internes. B. Robinson, Chicago.

Philippine Journal of Science, Manila

April

41 Achievements of Modern Medicine. P. C. Freer, Manila.
42 *Cultivation of Bacillus Lepræ. M. T. Clegg, Manila.
43 Treatment of Asiatic Cholera During the Recent Epidemic. H. J. Nichols, U. S. Army, and V. L. Andrews, Manila.
44 *Treatment of Cholera by Injections of Hypertonic Saline Solution with a Simple, Rapid Method of Intra-abdominal Administration. L. Rogers, Calcutta, India.
45 Suppression of the Cholera Outbreak in the Provinces of the Philippine Islands. A. J. McLaughlin, U. S. P. H. and M.-H. S.
46 Piroplasmosis E. Martini, Manila.
47 Distribution of Filaria in the Philippine Islands. J. M. Phalen and H. J. Nichols, U. S. Army.

42. Cultivation of Bacillus Lepræ.—The experiments conducted by Clegg on the cultivation of the leprosy bacillus were confined entirely to an attempt to grow the organism in symbiosis. Believing that the leprosy bacillus derives its nutrition from the products of the tissue cells in the lesions in which it is encountered, and from the fact that it occurs so frequently within the protoplasm of these cells, an organism was selected which could be cultivated and which corresponded in a degree to the living tissue cells; that is, an organism containing a nucleus and protoplasm, the ameba. The culture medium was composed of agar 20 grams, sodium chlorid 0.3, extract of beef 0.3; it was otherwise prepared in the same manner as ordinary agar media for bacteria, the finished product giving a reaction of 1 per cent. of alkaline to phenolphthalein. The medium was then placed in tubes and sterilized.

The culture medium, when it is to be used, is melted and poured into sterile Petri dishes and allowed to harden before being inoculated. The material containing the ameba is then spread in a thin layer over the surface of the medium. If the proper symbiotic bacteria are present, the ameba will develop in from two to ten days, depending on the source of the ameba and the number and character of the bacteria present. A culture of ameba was obtained from a dysentery stool and after a sufficient growth of the ameba had occurred to overbalance the original symbiotic bacteria growing with the ameba, that is to say, when it would have been necessary to add a fresh supply of the symbiotic bacteria to the culture in order to obtain a further development of the ameba, leprosy bacilli were added instead.

The inoculation of the plates with leprosy bacilli was accomplished by smearing the surface of the medium containing the ameba with a portion of the pulp of a leper's spleen, and incubated for six days at a temperature of 37 C. Microscopic preparations were then made from the cultures and stained with hot carbol-fuchsin solution, decolorized and counterstained by Gabett's method. A great number of leprosy bacilli were found to be present, together with short, plump. acid-fast bacilli, occurring mostly among the clumps of the leprosy bacili, and associated closely with the ameba. Those organisms which from their morphology were evidently leprosy bacilli were undoubtedly carried over from the original source, that is, from the spleen. Transplants from these plates were immediately made on fresh plates containing ameba and their symbiotic organisms, and incubated for two days at the same temperature. Slides were then prepared from this series of cultures and stained in the same manner. Microscopic examination showed that the short, plump acid-fast bacilli had increased in number, showing conclusively that the organism was multiplying. Control plates made at the same time with the same ameba and in the same manner, except without the material from the leper's spleen, showed no acid-fast organisms. In the cultures from two cases an acid-fast bacillus is growing and multiplying, which although it differs from the leprosy bacillus in morphology, nevertheless may be that organism, as we know nothing regarding the morphology of *Bacillus lepræ* on artificial media.

44. **Treatment of Cholera.**—Rogers found that the severity of the cholera attack is in proportion to the loss of fluid and salts from the blood, which, in all but mild cases of the disease, it is desirable to replace. This can best be done by the intravenous injection of about four pints of hypertonic salt solution, two drams of sodium chlorid to the pint (1.35 per cent.) being a suitable strength. The use of this solution has reduced the mortality during 1908 in the Calcutta Medical College Hospital by nearly one-half. The salt solution may be given intraperitoneally with great advantage. Postcholeraic uremia is associated with deficient blood pressure, and should be treated by methods which raise the tension in the arterial system.

Journal Abnormal Psychology, Boston

July

48 The Psychologic Principles and Field of Psychotherapy. M. Prince, Boston.
49 Therapeutic Value of Hypnotic Suggestion. F. H. Gerrish, Boston.
50 Simpl [illegible] tion as a Therapeutic Method. E. [illegible]
51 Treat [illegible] A. Waterman, Boston.
52 Psych [illegible] E. Jones, Toronto, Canada.
53 The [illegible] f the Hypnoidal State. B. Sid [illegible]
54 Obsessions and Associated Conditions in so-called Psychasthenia. J. E. Donley, Providence, R. I.
55 Psychoprophylaxis in Childhood. T. A. Williams, Washington, D. C.

Cleveland Medical Journal

July

56 Psychotherapy and the Emmanuel Movement. W. Sinkler, Philadelphia.
57 Hemorrhage in Ruptured Ectopic Pregnancy. H. Robb, Cleveland.
58 Adminstration of Nitrous Oxid and Oxygen for General Anesthesia. C. B. Parker, Cleveland.
59 The Skiagraph in Litigation. R. B. Newcomb, Cleveland.
60 Calcification of Fibromyomata of the Uterus. I. Ludlow, Cleveland.
61 Tonsil Enucleation with Its Capsule and Description of the Technic. W. B. Chamberlain, Cleveland.
62 Diagnosis and Treatment of Brain Tumor (continued). A. Peskind, Cleveland.

August

63 *Painless Dental Disease as a Cause of Neurasthenia and Insanity. H. S. Upson, Cleveland.
64 Exudative Diathesis with Demonstration of Cases. H. J. Gerste [illegible]
65 Fracture [illegible] Spine of the Ilium by Muscular [illegible] Literature. J. H. McHenry, Cleveland.
66 The Tuberculo-Opsonic Index. P. A. Jacobs, Cleveland.
67 Extraction of the Lens in its Capsule—or Intracapsular Expression of the Lens. C. C. Stuart, Cleveland.
68 Acute General Peritonitis in a Ten-Year-Old Girl. F. E. Bunts, Cleveland.
69 Hallux Valgus and Bunion. G. I. Bauman, Cleveland.

63. **Dental Disease.**—Upson puts on record a few observations made during the past two years in a broad and important field, that relating to dental diseases in connection with nerve strain and with the psychoses, melancholia, mania and dementia præcox. He says that of all cases of neurasthenia and the psychoses not due to obvious physical causes, such as digestive disorders and eyestrain, the great majority, possibly four-fifths in men and three-fifths in women, are due to dental disease. In several of his patients, severe nervousness, insomnia and melancholia have begun soon after extensive bridgework and capping. These symptoms have persisted several years without pain, and relief has followed only after removal of irritation in the teeth and jaws. Upson reports a number of cases in support of his contention.

Maryland Medical Journal, Baltimore

August

70 *Th [illegible] d Affiliations of Psychiatry. C. B. [illegible]
71 Id [illegible] 'own and Country (continued). C. [illegible]
72 *St [illegible] of Family Psychoses. J. G. Fitzgerald, Boston.
73 Avicenna—Avenzoar. H. M. Cohen, Baltimore.

70. Abstracted in The Journal, May 29, 1909, p. 1785.

72. **Family Psychoses.**—Fitzgerald believes that there is an evident tendency when several members of the same family of one generation become insane, to show a fairly uniform reaction type, so that it is possible to classify these cases as belonging to one given clinical group. There is also evidence to show that with succeeding generations, a psychosis occurring in each generation, there is a lowering of the reaction type and a likelihood of deteriorating psychoses developing, and still further from the original antecedent a probability of gross defectives appearing.

New Orleans Medical and Surgical Journal

August

74 Plea for the Systematic and Universal Examination of School Children's Eyes, Ears, Noses and Throats. F. Allport, Chicago.
75 Severe Deformity, Result of Anterior Poliomyelitis; Plastic Operation on Heel; Inguinal Hernia. C. W. Allen, New Orleans.
76 Amebic Dysentery. G. Dock, New Orleans.
77 *Diarrhea of Gastrogenous Origin. S. K. Simon, New Orleans.
78 Toxic and Nervous Conditions as Factors in Chronic Diarrhea. G. F. Patton, New Orleans.
79 Surgical Aspects of Chronic Diarrhea: Appendicostomy or Colostomy. H. Gessner, New Orleans.
80 *Acute Spasmodic Asthma as Evidence of Autointoxication. A. Eustis, Abbeville.
81 *Prophylactic Injections of Serum and the Theory of Anaphylaxis. I. I. Lemann, New Orleans.
82 Blue Sweat (Indicanhydrosis). J. A. Storck, New Orleans.

77. **Diarrhea of Gastrogenous Origin.**—The diarrheas of purely gastrogenous origin can not be said to be of very frequent occurrence, but, though relatively infrequent, the stomach, according to Simon, does play a part, and he emphasizes the importance of this class of diarrheas.

80. **Acute Spasmodic Asthma Evidence of Autointoxication.**—In 1905, Eustis first called attention to the clinical significance of indicanuria, and since then he has made it a practice to include this in the routine examination of patients. The fact that he has found evidence of autointoxication in every case of asthma examined by him for four years, leads him to believe that during the attack there is some toxin in the blood, which acts similarly to muscarin, or which depresses the respiratory center to such an extent that the reflex stimulation of an inflamed nasal mucosa results in a stimulation of the constrictor fibers of the vagus. Nearly every one of these cases was relieved by diminished nitrogenous diet and measures to reduce the toxemia. Eustis employs eliminative treatment and more hygienic procedures, using few sedatives.

81. Abstracted in The Journal, May 22, 1909, p. 1687.

Northwest Medicine, Seattle, Wash.

July

83 Use of Vaccines and Serums. C. S. Wilson, Tacoma, Wash.
84 Nasal, Nasopharyngeal and Oropharyngeal Obstructions with Special Reference to Children. J. W. Summers, Walla Walla, Wash.
85 The Brompton Hospital and its Treatment of Tuberculosis by Graduated Labor. C. Quevli, Tacoma, Wash.
86 Suggestions in the Use of Water Cystoscopes. A. H. Peacock, Seattle, Wash.

Archives of Diagnosis, New York

July

87 *Complement Fixation Test in Diagnosis of Syphilitic and Metasyphilitic Conditions. H. Noguchi, New York.
88 *Roentgen Rays in Diagnosis of Pulmonary Tuberculosis. S. Lange, Cincinnati.
89 *Differentiation of Reflex Dyspepsia from Primary Organic Diseases of the Stomach. D. Fulton, Los Angeles.
90 Diagnostic Significance of Epithelia in Urine. L. Heitzmann, New York.
91 Importance of Early Diagnosis of Tabes and Cerebrospinal Lues. T. A. Williams, Washington, D. C.
92 Points in Diagnosis of Tumors of the Spinal Cord. J. Grinker, Chicago.
93 Hematuria, Pyuria and Allied Conditions in Infants and Children. L. C. Ager, Brooklyn.
94 *Diagnostic Signs in New Growth of Kidney. F. Cabot, New York.
95 Henoch's Purpura with Symptoms Like Acute Appendicitis. J. A. Lichty, and H. H. Donaldson, Pittsburg.
96 Itching, A Pain Equivalent. C. H. Bangs, Boston.
97 Multiple Spontaneous Keloid. G. M. MacKee, New York.

87. **Syphilitic and Metasyphilitic Conditions.**—Noguchi emphasizes the fact that any method in which five different factors—amboceptor, complement, corpuscles, antigen and patient's serum—are not separable, titrable and adjustable, is defective in principle and should not be recommended for diagnostic purposes. As regards the value of the butyric-acid reaction in the diagnosis of nervous diseases, the results obtained by Noguchi, together with Moore, Rosanoff and Wiseman, show that it is positive in nearly 90 per cent. of cases of paresis and tabes, and that it is nearly as reliable a diag-

nostic indicator as is pleocytosis. Compared with the percentage of positive results by the Wassermann reaction, the butyric acid test yields better results, especially in cases of cerebrospinal lues in which the Wassermann reaction is usually inconsistent.

88. **Pulmonary Tuberculosis.**—Lange believes that the thorax is peculiarly adapted for Roentgenologic examinations, but all conclusions must be based on technically perfect plates made during a respiratory "still-stand." The interpretation of the shadows must be correlated to the history and clinical findings. The Roentgen ray will register actual and definite increase in density of the lung tissues. Since the term incipient tuberculosis is a clinical (not a pathologic) one, and since the recognition of incipient tuberculosis must depend on the size, distribution and location of the lesions and on the skill of the examiner, a comparison between the usual physical examination and the Roentgen ray examination is difficult to make. For deep-lying lesions and bronchial gland involvement the Roentgen ray is superior. Roentgen ray findings point to the bronchial glands and lung hilus as the most common starting points of tuberculosis.

89. **Differentiation of Reflex Dyspepsia.**—According to Fulton, the symptoms of all primary organic diseases of the stomach are dependent on the quality or quantity of food eaten. Functional and nervous dyspepsias are independent of the diet and are dependent on the nervous conditions of the patient. Reflex dyspepsias are but slightly influenced by diet and are dependent on aggravation of the primary disease, and are absent when the primary disease is latent.

94. **Diagnostic Signs in New Kidney Growth.**—In the case of a patient who presents himself with a history of intermittent hematuria in whom no blood is found in the urine, either by macroscopic or microscopic examination, Cabot advises massaging the kidneys, one at a time, as was done in a case cited. A man, aged 47, gave a history of occasional attacks of hematuria with periods between of several weeks when his urine was free from blood. *X*-ray examination was negative. Bimanual examination of the kidneys seemed to show some enlargement of the right kidney, but not perfectly clear. The patient had been told by a distinguished surgeon that probably both kidneys were diseased and operation was not advisable. Cystoscopy revealed a perfectly normal bladder and normal ureteral openings. A catheter in each ureter for a distance of six inches drew off clear urine. On massaging each kidney separately immediately abundant bright red blood gushed out of the right ureteral catheter; none from the left. The diagnosis of hypernephroma of the right kidney was confirmed by operation.

Woman's Medical Journal, Toledo, O.

July

98 Relation of the Physician to the Public. F. P. Henry, Philadelphia.
99 Early Diagnosis of Extrauterine Pregnancy. G. P. Murray, New York.
100 Chemical Rays as Promoters of Life and Energy: Their Mode of Action and Their Therapeutic Uses. M. A. Cleaves, New York.

Archives of Pediatrics, New York

July

101 Diagnosis of Tuberculosis in Young Children. H. L. K. Shaw, and A. T. Laird, Albany, N. Y.
102 *Relation of Measles, Whooping Cough, and Influenza to Tuberculosis in Childhood. E. P. Copeland
103 *The Soy Bean in Infant Feeding. J.
104 Tuberculous Enteritis, with Foreign B
Primary Intestinal Tuberculosis. J.
phia.
105 Forty Cases of Anterior Poliomyelitis, Observed in New York City During the Epidemic of 1907. H. Heiman, New York.
106 Case of so-called Congenital Malaria. F. S. Meara, New York.
107 Tertian Malaria (Golgi Type), with Gastrointestinal Symptoms. J. J. Philips, Tarboro, N. C.
108 *Two Interesting Dermatologic Cases. C. J. Hunt, Philadelphia.
109 Pulmonary Gangrene in Children; Report of a Case. W. P. Lucas, Boston.

102. Abstracted in The Journal, Oct. 17, 1909, p. 1366.

103. **Soy Bean in Infant Feeding.**—The soy bean (*glycine hispida*), sometimes incorrectly called the soja bean, is an annual leguminous plant which originally grew in a wild state from Cochin, China, to the south of Japan and to Java. It is now being grown in various sections of this country and can be obtained in the open market like any other legumin. As regards the use of the beans in infant feeding, it seemed to Ruhräh that soy bean gruel or milk, either alone or mixed with cow's milk, might be of value in feeding several classes of cases, viz., of marasmus and malnutrition, as a substitute for milk in diarrhea, and in intestinal and stomach disorders, and in diabetes mellitus. So far, the gruel has been prepared by soaking the beans over night, stirring to remove the envelop surrounding the bean. Three times the amount of water is added to the beans and they are boiled until a smooth gruel results. This is strained, if necessary. This has the odor and taste of malt, but with the addition of a little salt is well taken, especially after the first bottle or two. The gruel is retained unusually well and seems to be digested easily. The stools are not more frequent than with other foods; they are light brown in color, like those from malted milk. This soy bean gruel has nearly the same food value as milk, and for certain children may need further dilution. About the same size feedings should be used as if milk were being given; 5 per cent. sugar may be added to increase the fuel value. Ruhräh has not used the beans in a sufficiently large number of cases, nor over sufficient periods of time to justify any further statements at this time, but he feels that properly used they will be a most valuable addition to the dietary of the sick infant. Grinding them to a bean meal would simplify matters very much, and, if success attends their use, a soy bean meal could easily be prepared.

108. **Two Interesting Dermatologic Cases.**—The reason for the report of these two cases is found in the character of the lesions, their association and mode of onset. In both there is a certain similarity as to the personal history, and the character and distribution of the lesions were identical as to region. They appeared on the tips and on the extensor surfaces of the phalanges of the upper extremities as distinct vesicles of large size, without an inflammatory areola, caused a separation of the epidermis from the corium, were filled with a sterile serous fluid, and were accompanied locally by itching, burning and heat. The first patient, a girl of 10 years, had fallen while at play, striking her hands rather severely. She complained at the time that her hands "stung," but no lesions of any type were observed, though the hands were somewhat reddened.. For relief the child put her hands under cold water and immediately lesions of the type described above appeared. She had pertussis when 2 years old, which merged into an attack of measles, apparently uncomplicated. At a later date, she had an attack of varicella, and at her sixth year, and later, suffered considerably from rheumatism in the upper and lower extremities. She had three attacks ot infectious blepharitis, complicated in every instance by a facial tic, which involved, for the most part, the muscles of the eyelids. She had had frequent mild attacks of urticaria and one severe attack which was associated with aching of the extremities. A careful physical examination showed that she was totally negative, except for enlarged tonsils, which were removed. The lesions healed without infection and there have been no recurrences.

The patient, a boy aged 7 years, while riding on the street car, suddenly felt a sense of burning pain in his hand and found what he called blisters on the ends of his fingers. The boy complained of burning and pain, with itching, and there was some local heat. He had pertussis at his sixth year, and has been subject to slight digestive disturbances for a long time past, especially in the last six months. Ever since his third year he has had a well-developed urticaria during the strawberry season, and during the last year had a severe attack of urticaria following excessive sweating while at play. He has complained of rheumatic pains in the extremities during the past winter more than during any previous winter.

Kansas City Medical Index-Lancet

July

110 Puerperal Sepsis. E. A. Reeves, Kansas City, Mo.
111 The McCoy Instruments in the Submucous Resection of the Nasal Septum. H. Hays, New York
112 *Increased Longevity of Life Insurance Policyholders. B. Foster, St. Paul.
113 The Psychologic Basis of Inebriety. T. A. Williams, Washington, D. C.
114 Value of Formidine as a Surgical Dressing in Minor Operations. O. M. de Keiffer, Chicago.

115 Paracentesis in Certain Forms of Eye Symptoms. W. A. Camp, Springfield, Mo.
116 The Case Against the Sun. C. E. Woodruff, U. S. Army.
117 Burns and Scalds. E. P. Lacy, Bessemer, Ala.

112. This subject was discussed editorially in THE JOURNAL, May 1, 1909, p. 1428. The article was also published in *The Medical Fortnightly*, April 26, *Southern California Practitioner*, May, *Southern Practitioner*, May, *Alienist and Neurologist*, May.

Annals of Surgery, Philadelphia

July

118 *End Results After Total Excision of the Scapula for Sarcoma. C. B. G. de Nancrede, Ann Arbor, Mich.
110 The Old and Beginning of the New in Surgery. J. E. Mears, Philadelphia.
120 Sudden Death: Study of Certain Cases Occurring During Physical Exercise or Psychic Shock. J. B. Blake, Boston.
121 *Treatment of Tetanus by Chloretone. W. Hutchings, Detroit.
122 *Aneurisms in Young People. T. A. McGraw, Detroit.
123 *Gunshot Injury of Brain. J. Ransohoff, Cincinnati.
124 Complete Detachment of Facial Bones from Cranium, together with Multiple Fractures of the Sides and Base of Skull. C. A. Powers, Denver.
125 *The Parathyroid Question. C. H. Mayo, Rochester, Minn.
126 *The Histopathology of Goiter. F. J. Shepherd and C. W. Duval, Montreal, Canada.
127 *Excision of the Larynx for Carcinoma. J. Bell, Montreal.
128 *Operative Treatment of Heart Wounds. C. H. Peck, New York
129 *Operative Treatment of Tuberculosis of the Lungs with Tota Thoracoplastic Pleuropneumolysis. P. L. Friedrich, Marburg, Germany.
130 *Resection of Ribs Combined with External Pressure in Treatment of Tuberculosis of Apex of the Lung. L. Freeman, Denver.
131 *Treatment of Fistulas and Abscesses Following Operations for Empyema of the Thorax. A. J Ochsner, Chicago.
132 Empyema Thoracis. A. Vanderveer. Albany, N. Y.
133 [illegible] er Intrathoracic Resection of the [illegible] New York.
134 * [illegible] W. A. Lane, London.
135 *Surgery of the Large Intestine. W. J. Mayo, Rochester, Minn.
136 Distortion of Mesentery and its Relation to Intestinal Obstruction. J. D. Bryant, New York.
137 *Rare Hernias. W. B. Coley, New York.
138 *Vesicointestinal Fistulas. F. W. Parham, and J. Hume, New Orleans.
139 *One Hundred and Thirty-one Consecutive Cases of Fibroid Tumors of the Uterus Demanding Operation. A. Maclaren St. Paul
140 *Resection of the Sciatic Nerve. K. A. J. Mackenzie, Portland, Ore.
141 Inequalities of the Right and Left Femora A. T. Bristow, Brooklyn.
142 Transportation of Skin Flaps from one Part of the Body to Another and from one Individual to Another. J. M. T. Finney, Baltimore.
143 *Massive Keloid of Face and Hands. C. A. Porter, Boston.

118, 134. Abstracted in THE JOURNAL, July 3, 1909, pp. 68, 69.

121. Published in *Surgery, Gynecology and Obstetrics*, July, 1909.

122. **Aneurisms in Young People.**—McGraw reports two cases of aneurism in young men 16 and 17 years of age. Both aneurisms were associated with great dilatation of the heart and, in both patients, the arteries were soft and fragile. There was no history of rheumatism or other acute infectious diseases.

123, 135, 137, 139, 140.—Abstracted in THE JOURNAL, July 31, 1909, pp. 407-409.

125, 127, 129, 131.—Abstracted in THE JOURNAL, July 24, 1909, p. 319.

126. **Histopathology of Goiter.**—Shepherd and Duval studied fifty-nine cases. Eighteen were unquestionably cases of Graves' disease, two of which proved fatal. The infolding and budding of the acinal epithelium was present in some parts of the gland in 20 cases. The gland presented tumor formation in three cases of the series, viz., carcinoma in one, intercystic papilloma in another, and angioma in still another. Chronic inflammation in the form of lymphoid cell and plasma cell infiltration, together with an increase in fibrous tissue stroma, occurred 29 times. Eleven cases were of a simple cystic nature.

128. **Operative Treatment of Heart Wounds.**—Peck reports a case of wound of the right auricle which was sutured, with recovery of the patient. He also tabulates 158 cases of sutured heart wounds.

130. **Surgery of Lung Tuberculosis.**—Freeman says that the healing of stubborn tuberculous pulmonary lesions is favored by collapse of the lung. This may be obtained by (a) artificial pneumothorax; (b) extensive extrapleural resections of all the ribs, with removal of their periosteum; (c) local resections of ribs, especially at the apex. The first method is not always applicable, owing to adhesions and to induration of lung tissue, while the second is difficult and dangerous, and should be employed under exceptional conditions only. The third method is applicable to obstinate troubles at the apex, and can be employed alone or in conjunction with an artificial pneumothorax, according to circumstances. Its full benefit can not be obtained, however, unless the removal of the ribs, which need not include their periosteum, is followed by the application of firm external pressure in the manner suggested by Freeman.

138. **Vesicointestinal Fistulæ.**—Parham and Hume summarize their article as follows:

1. Establish clearly the nature of the lesion.
2. *Determine the location of the opening in the bladder and in the intestine, when possible; this can usually be done by the modern methods of exploration of the rectum and bladder, and by a study of the intestinal contents passed per urethram.*
3. Medical treatment is always to be tried for a reasonable time, as some patients have recovered under such management, and certain fistulæ of syphilitic origin have been absolutely cured by appropriate treatment.
4. The prognosis in patients untreated is generally bad and spontaneous cures are rare.
5. Ascending infection of the kidneys is one of the most important *sequelæ, and this is always to be feared in patients who do not* recover within a reasonable time.
6. Colostomy relieves the symptoms though it does not cure the condition, but it is to be tried in all cases in which a radical procedure is not possible.
7. Radical operation is always to be preferred, when practicable; from below, when the fistula is situated within 4½ inches of the sphincter in suitable cases; intraperitoneally, for high-placed fistulas the viscera being separated and direct suture of each opening done.
8. When the radical operation can not be done, bilateral or total exclusion of the portion of the intestine involved, may be done when there is no urinary flow into the bowel; this not being advisable, one of the shunting anastomosis procedures should be done, or simple drainage of an intermediary pouch resorted to.
9. The suprapubic intravesical suture of the bladder orifice is not to be recommended, because difficult of execution and uncertain in result.
10. Exploratory laparotomy is indicated in all cases in doubt to determine the location of the fistula and the operation of choice. Colostomy is to be regarded as an operation of last resort and applicable only in those cases in which the artificial anus may with certainty be placed above the fistulous communication with the bladdder.

143. **Massive Keloid of Face and Hands.**—In Porter's case the patient's face presented masses of keloid extending from the hair line on the forehead over the whole face, including both ears. A small portion of the right cheek was visible, the eyes appearing as slits in the midst of the exuberant overgrowths. Slight impairment of hearing; vision in left eye was interfered with; mouth could be opened only half an inch. There was excessive keloidal growth on the backs of both hands and the lower third of forearms, the fingers being hyperextended, twisted and distorted. In numerous places the keloidal tissue was eroded, with some foul discharge from the sulci between adjacent lobules.

After many operations, there has been a gradual but distinct abatement of the tendency to form keloidal tissue. The forehead is covered by shiny, movable skin, resulting partly from natural healing and partly from skin grafts. There is some keloid about the deformed ears, but both show evidence of their presence. The nose and cheeks are fairly normal, but there is still some ectropion in spite of the numerous operations. The hands have been improved so far as ability to grasp objects with the thumb is concerned, but dorsal hyperextension of the fingers still persists. Roentgen ray exposures seem to have been of no value.

Journal Missouri State Medical Association, St. Louis

July

144 Medical Organization. A. R. Kieffer, St. Louis.
145 Trend and Benefits of Modern Medicine. R. H. Goodier, Hannibal.
146 Nature of Cancer and Recent Additions to the Methods of Treating Inoperable Cancers. F. J. Lutz, St. Louis.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

July

147 State Care of the Insane. W. F. Drewry, Petersburg, Va.
148 Practical Methods for the Suppression of Tuberculosis in Virginia. C. P. Wertenbaker, Norfolk, Va.
149 Incised Wounds of the Liver Due to Accidental Traumatism: Report of Case Complicated by Evisceration. A. McGlannan, Baltimore.
150 Adenoids—Causes, Dangers, and Treatment. C. P. Jones, Newport News, Va.
151 Physiotherapy in the Treatment of Chronic Diseases; Report of Cases. J. C. Walton, Richmond, Va.

Pennsylvania Medical Journal, Athens

July

152 The Profession and the People. T. E. Swan, Easton.
153 Poliomyelitis: Epidemiology. F. F. Urey, New Castle.
154 *Symptomatology of Acute Anterior Myelitis. J. H. McKee, Philadelphia.
155 *Treatment of Poliomyelitis. T. Diller, Pitsburg.
156 How to Prevent Spread of Disease in our Public Schools. A. C. Brooks, Wilkes-Barre.
157 *Importance of Starches in Infant Feeding. W. W. Feldt, Bellefonte.
158 Gonorrheal Ocular Metastases. E. Stieren, Pittsburg.
159 *Intracranial Complications of Otitic Origin. E. W. Day, Pittsburg.
160 *Epithelioma of the Lower Lid, with Successful Transplantation from the Arm. G. B. Jobson, Jr., Franklin.
161 *Aural and Laryngeal Complications of Typhoid, Especially as Observed in Hospital Practice. J. S. Gibb, Philadelphia.
162 *Mental Aspect of Neurasthenia. J. E. McCuaig, Erie.
162 Oral Prophylaxis from the Viewpoint of the Abdominal Surgeon. S. E. Tracy, Philadelphia.

154, 155, 157.—Abstracted in THE JOURNAL, Nov. 7, 1908, pp. 1629, 1630.

159, 160.—Abstracted in THE JOURNAL, Oct. 17, 1908, p. 1356.

161.—Published in *Monthly Cyclopedia and Med. Bulletin*, October, 1908.

162.—Abstracted in THE JOURNAL, Oct. 3, 1908, p. 1179.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

July 31

1 *The Belfast Medical School. Sir W. Whitla.
2 *Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.
3 *Progress in Intestinal Surgery. A. E. Barker.

1. **The State of Medical Education.**—This address consists, in the main, of a historical sketch of the Belfast medical school, touching briefly on the present state of medical education, especially condemning the congestion of the curriculum. Whitla believes in the sending out of men qualified immediately to enter on the routine practice of their profession. We are, in some respects at least, behind the results obtainable in the old days of apprenticeship. He says that the preliminary and intermediate periods, amounting to three years out of the minimum of five years, must be shortened, and the clinical period of study must be increased if we are to train more efficiently, and turn men out of our teaching institutions properly equipped for their serious life work. How is this readjustment of the curriculum to be accomplished? Obviously, an enormous aid to it would be a compulsory examination in experimental physics and chemistry at matriculation. Such an examination could never dispense with the necessity of a complete academic course in these subjects; it would ensure the student having some knowledge of the principles of both sciences from the start of his college work, and enable the average young man easily to pass his further examinations in them within a period of twelve months from matriculation. Already the old notion that the stage of school life should be entirely devoted to purely literary studies is showing signs of yielding to the urgent pressure of modern ideals, which demand that boys must be trained to observe and reason on the operations of the natural forces continually manifesting their presence in the world around them. Owing, however, to the present unsatisfactory arrangements for the teaching of science in the majority of the secondary schools, little relief is immediately to be expected from this method of shortening the curriculum of the preliminary subjects, though we can confidently count on a steady improvement in the amount of elementary scientific knowledge possessed by medical candidates presenting themselves for matriculation. There is a growing conviction, amounting among those best qualified to judge aright in this matter to a consensus of opinion, that a prolongation of the period devoted to clinical studies can be achieved (without unduly lengthening the entire curriculum) only by a radical change in the method of teaching the entire group of preliminary and scientific subjects. The teaching of these subjects must be conducted with due regard to their bearing on the special requirements of the student of medicine.

2. **Progressive Medicine.**—Philip discusses fully the development of knowledge of tuberculosis, believing that it would be well to limit attention to one department, which illustrates in striking fashion the extraordinary revolution of thought which has occurred in little more than a generation.

3. **Intestinal Surgery.**—Barker gives a short review of the gradual evolution of intestinal surgery from the point of view of one who, though still in his fifties, has seen it in his own time. He says that this evolution has not been the result alone of the better conception of asepsis, much as we owe to it. Nor has it been due altogether to improved manipulative skill. *It has resulted from clearer views on the vital processes concerned in all lesions within the abdomen.* These we have gained partly from closer clinical observation, aided by what we have learned from the anatomist, the pathologist, bacteriologist, biologist and physicist, and from careful sifting of our experiences, whether of failure or success.

Lancet, London

July 31

4 *The Belfast Medical School. Sir W. Whitla.
5 *Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.
6 *Progress in Intestinal Surgery. A. E. Barker.
7 *Chronic Rheumatic Myositis (*Muskelschwielen*). N. S. Yawger.
8 Missed Labor Treated by Abdominal Section. C. E. Purslow.
9 Incarceration of the Appendix Containing a Foreign Body (Pin) in the Sac of an Inguinal Hernia in a Child. T. H. Kellock.
10 Angioneurotic Edema Associated with Cirrhosis of the Liver. S. G. Corner.
11 Place of the Poor-Law Medical Officer in a Unified County Medical Service. S. Webb.

4, 5, 6. See abstracts 1, 2, 3.

7. **Chronic Rheumatic Myositis.**—Yawger believes that the most frequent cause of the so-called gouty or rheumatic pain is a form of chronic myositis. Among the causes affecting this condition is heredity, there being a distinct family tendency to these diseased muscles. The effects of climate and weather are most marked. Chilly and rainy weather often causes the indurations to become painful; it is sufficient to be within the outer limits of storm conditions and not necessarily within the area of rainfall. They may appear at almost any time of life. While probably no voluntary muscle enjoys an immunity there are sites of predilection, the most common of which is in the muscles of the head and neck. This he believes is due to the exposure through lack of covering to which this part of the body is necessarily subjected. The gluteal, lumbar and deltoid regions, and calf muscles are often involved. The muscles may be invaded at their points of insertion, as in those attached to the superior curved line of the occipital bone and those inserted into the processes of the upper cervical vertebræ; or the infiltrations may appear within the bodies of the muscles as is frequently seen in the abdominal wall, and in the sternomastoid muscles near the level of the thyroid cartilage. At times the infiltration extends to the periosteum to which the muscles are attached and also to the fascia. The pathology of these diseased muscles is largely hypothetic for the reason that people do not die from this condition. The muscle infiltration may be due to the deposition of an excess of the salts of uric acid or an allied substance, with the later formation of connective tissue. Yawger has known vigorous massage treatment of a patient with extensive indurations to be followed by an attack of acute muscular rheumatism. It seems probable that this formation of indurations is a manifestation of a metabolic disturbance autotoxic in character. At all events, it appears that as soon as good circulation is established relief is at once experienced. Whatever this muscle poison is, many of its subjects have had bilious attacks in childhood, and in advanced life they often suffer from arteriosclerosis. The mistakes in diagnosis to which these rheumatic deposits give rise are very numerous. Many cases of cephalalgia are of this variety; involvement of the intercostal muscles has been taken for intercostal neuralgia and pleurisy; in the abdominal wall for acute and chronic appendicitis, gastric ulcer, abdominal and pelvic adhesions, calculus of the kidney; and floating kidney; involvement of the gluteal region for sciatica and hip-joint disease; in the neck they have been mistaken

for swollen glands. The treatment consists of a thorough course in massage.

Bristol Medico-Chirurgical Journal

June

12 Smallpox in Bristol and Neighborhood. D. S. Davies.
13 Indications for Gastroenterostomy. T. Carwardine.
14 Family with a Congenital Deformity of the Nose, and the Results of Subcutaneous Injection of Wax. E. H. E. Stack.
15 Lead Encephalopathy. J. A. James.
16 Cretinism and the Puerperium; Sequel to a Recorded History. D. A. Alexander.
17 Treatment by Ionization or Cataphoresis. H. P. Tayler and H. L. Jones.
18 Electricity in General Practice. H. P. Tayler.

Intercolonial Medical Journal of Australasia, Melbourne

June

19 Anatomic and Clinical Study of the Thoracic, Abdominal and Pelvic Viscera, as Dissected from the Back. R. J. A. Berry.
20 Bismuth Injections into Sinuses. J. Smith.
21 Ions and Electrons. S. Argyle.
22 Clinical Value of the Wassermann Test for Syphilis. K. Hiller.
23 *Cirrhosis of Liver with Ascites—Omentopexy—Recovery. E. R. White.
24 Double Coxa Vara and Tuberculous Meningoencephalitis—Recovery. E. R. White.

23. **Omentopexy.**—A girl of 9 years had had an abdominal swelling since birth, and had always worn an abdominal binder. Eighteen months ago the swelling gradually increased. She tired easily with shortness of breath on exertion. The liver was enlarged upward and downward half-way to the umbilicus, and the edge was well-defined and distinctly nodular. The spleen was also enlarged, extending four fingers' breadth below the costal margin, and there were also definite signs of ascites. Two months after admission, under chloroform, the abdomen was opened in the midline by a five-inch incision. The cavity was dried, and the liver exposed, which was of a typical hobnail type. The peritoneum over liver and spleen, and the parietal peritoneum over a corresponding area, were rubbed with gauze. The great omentum was located, and the greater portion, six inches by six inches, was stitched by catgut to the anterior parietal peritoneum. The abdominal wall was then completely closed, layer by layer. A small incision was made more laterally over the right lobe of the liver, which was exposed and then sewn to the abdominal wall by four strong catgut sutures, and the wall again closed. There was no immediate change, as the abdomen filled with fluid, and was tapped as usual three times in five weeks. In three or four weeks after operation an improvement was noticeable. The urine passed daily increased from ten ounces to twenty to thirty ounces. The abdominal measurement became less and the general condition of the child was better. Two months after the operation the child was bright and happy, and running about. There are no signs of ascites. The liver is shrinking in size.

Dublin Journal of Medical Science

July

25 Postoperative Tetanus. L. G. Gunn.
26 Use of Carbon Dioxid Snow in Dermatology. R. L. Sutton.
27 Clinical Reports of Rotunda Hospital. E. H. Tweedy, J. R. Freeland, and B. A. H. Solomons.

British Journal of Children's Diseases, London

June

28 Adenoids and Nocturnal Enuresis. L. Williams.
29 *Pulmonary Tuberculosis in Young Children. J. Miller.
30 *Congenital Hernia. J. B. Barrett.

29. **Pulmonary Tuberculosis in Young Children.**—Miller suggests the following as the simplest method of classification, and one which includes all types of the disease: 1. Disseminated metastatic tuberculosis (miliary tuberculosis). 2. Caseous bronchopneumonia, or merely caseous pneumonia. 3. Fibrocaseous pneumonia. Both of the last two conditions may be complicated by the presence of cavities.

30. **Congenital Hernia.**—In Barrett's case the hernia was a large one and never disappeared into the abdomen. It could not be reduced entirely by taxis. Attempts at reduction seemed to pain the child. Moreover, the nurse in charge said that the child would sometimes cry as if in pain. An incision was made in the usual line for inguinal hernia in children. The sac was opened and an attempt made to return the contents to the abdominal cavity. This proved difficult, and it was then discovered that the appendix was adherent to the left testicle, an unusual condition, which explained the symptoms before operation. The free end of the appendix was also adherent to the cecum, which was also in the sac. The adhesions were ligatured and cut. The appendix was removed, as it was thought that the adhesions were probably due to inflammation in it, and the contents of the sac returned to the abdomen. The internal ring was extremely large, and three sutures were employed to close the conjoined tendon to Poupart's ligament.

Journal of Obstetrics and Gynecology of British Empire, London

July

31 Primary Chorioepithelioma of the Ovary. J. S. Fairbairn.
32 *Polypoid Endometritis, Complication of Pregnancy and the Puerperium. F. A. Nyulasy.
33 Scopolamin-Morphin Narcosis in Labor. Sir J. H. Croom.
34 *Ligature of the Ovarian Vessels as Substitute for Oöphorectomy. H. M. W. Gray.
35 Epithelial Contents of a Paroöphoric Cyst. H. K. Whittingham.
36 Toxemia of Pregnancy Complicated by Rupture of Uterus. B. A. H. Solomons.
37 Gauze Drainage in Puerperal Sapremia. A. Donald.
38 Bilateral Pelvic Abscess During Pregnancy. A. Donald.
39 Adenomyoma Uteri. C. E. Purslow.
40 Eclampsia Treated by the Administration of Chloroform in the Year 1849. J. R. Fothergill.

32. **Polypoid Endometritis.**—Nyulasy believes that not only is polypoid endometritis not a malady of great rarity, but, on the contrary, is one of much frequency, attended by serious and sometimes fatal consequences, and liable to be met with in any woman during the child-bearing epoch. It accounts for much of the otherwise inexplicable mortality still occurring among puerperal women as the result of sepsis, more especially in private practice, in spite of the improved modern methods in the conduct of delivery now generally adopted. Polypoid decidual endometritis is the most important disease of the decidua, and is a frequent cause of abortion. It is a result of pre-existing chronic endometritis beginning prior to, or coincidentally with, pregnancy, and continued into the puerperium, during which acute processes are grafted on the chronic condition in consequence of septic infection. The most conclusive evidence, however, that polypoid endometritis usually commences prior to, or during pregnancy, is furnished by the fact that in many cases it is found to be distinctly syphilitic in origin, as evidenced by the history and microscopic appearances of cases examined. An interesting point is that in many instances the mothers show no external signs of constitutional syphilis, thus illustrating Colles' law; but that the mother does not become actually immune and escape serious lesions in these cases is shown by the very existence of syphilitic endometritis. During the past ten years Nyulasy met with over 100 cases in private and hospital practice, and, at the very lowest estimate, he says that it will be encountered in from 3 to 5 per cent. of all pregnancies, whether ending prematurely or at full time. Many cases of adherent placenta are due to it. In the majority of cases it is really a condition superimposed on and secondary to polypoid endometritis, for which it is usually mistaken. But from a pathologic, surgical and medicolegal standpoint, the existence of polypoid endometritis in the puerperium is of infinitely greater importance than the fact that there may be fragments of placenta adhering to the polypoid masses, because it is essential to remove these masses in order to save the life of the patient. Early curettage, by means of the ungloved finger or fingers, and a large-looped moderately sharp curette is essential for the satisfactory removal of polypoid conditions of the endometrium in the puerperal woman. By the early resort to this method such a formidable operation as hysterectomy in such cases would never be needed.

34. **Ligature of Ovarian Vessels.**—The operation advocated by Gray is performed in the following manner: The abdomen is opened by a vertical suprapubic incison, from ½ to ¾ inches to one or other side of the midline. Both layers of the sheath of the rectus and the peritoneum are opened in a corresponding line, the rectus muscle being displaced outward. Having decided that ligature of the ovarian vessels is feasible, the ovary of one side is pulled forward and away from the side of the pelvis. This makes the vessels taut and brings into evidence the "clear space" in the outer part of the broad

ligament through which fine silk ligatures (No. 1) are pulled by a handled needle or ligature carrier. If the ovaries are prolapsed into Douglas' pouch the ligatures are placed at such an interval that, when the vessels are firmly tied, the part between the ligatures resected, and the ends of the threads tied together so as to approximate the "stumps" the ovaries will lie on the brim or just immediately below the brim of the pelvis. (This procedure is similar to the usual operation for varicocele in the male). Gray prefers to arrange the ligatures, especially if the veins are varicose and tortuous, so that the ovaries are slung well up, because, owing to stretching of the vessels afterward, they tend to settle in their normal position. When the ovaries are not displaced the vessels are merely divided between two ligatures, the ends of which are tied together. If the "raw" ends of the vessels protrude, the peritoneum may be stitched over them with fine silk or catgut, so as to prevent the formation of adhesions. In cases in which there is much tension or a likelihood of postanesthetic vomiting, it is well, before tying, in order to prevent slipping, to pass one end of each ligature transversely through the leash of vessels above and below the site of ligature, respectively. In some cases adhesions under the lower part of the sigmoid flexure have to be separated in order to allow the necessary amount of vessels to be removed.

Annales de Dermatologie et de Syphiligraphie, Paris

July, X, No. 7, pp. 417-480

41 New Form of Cutaneous Discomycosis. P. Ravaut and Pinoy.
42 Ringworm in Italy. (Etat actuel des trichophyties de la province de Parme.) G. B. Dalla Favera.
43 *Roentgen-Ray Treatment of Ringworm of the Scalp. (Radiothérapie des teignes; des critiques qu'on lui a faites; des accidents qu'elle peut causer et des moyens de les prévenir.) R. Sabouraud.

43. **X-Ray Treatment of Ringworm of the Scalp.**—Sabouraud has been the pioneer in this line of treatment and has had five years of experience and favorable results with an annual average of 500 children thus treated. He here discusses the possible objections to the method, the danger of injury of the brain and of rendering the part exposed permanently bald. He has never witnessed anything which even remotely suggested injury of the brain in any instance, although he has kept careful watch for evidences of such. At first he did not venture to apply this treatment until the children were over 2 years old and the fontanelles closed, but later he found that this made no difference and he now applies the *x*-rays at any age. He has never observed any nervous symptoms or agitation or depression, no modification in the pulse and not even a headache in his 2,000 scalp ringworm patients thus treated. At the same time, it is easy to induce a dermatitis which may kill the hair in the part, and he warns that extreme care is necessary to avoid overexposure and that no one should apply this method of treatment unless he has well studied the technic for this special affection. A trifle of excess does no harm in Roentgen treatment of an epithelioma, but it may produce a permanent bald spot on the scalp. He measures the strength and duration of the exposures with a special pastille made with platino-cyanid of barium mixed with amyl acetate collodion. As sunlight affects it, the exposures are always made in semidarkness, and he warns that when the radiometer is taken to the light to examine it, this is liable to affect its tint misleadingly; it must also be borne in mind that while the radiometer is being examined the *x*-rays are still continuing their work on the scalp, and they thus get in more work than is indicated by the index. He gives a number of suggestions for guarding against overexposure of any one part, warning especially that restless children are liable to dislodge the protecting shields over parts that have already been sufficiently exposed, and thus give them an extra dose. If the head of the child is so small that it rounds up into the "localizing tube," this is liable to increase the dose received. Another point to be borne in mind is that previous medicinal applications to the scalp render it more sensitive to inflammation. In several cases, a localizing x marked on the skin with iodin caused a delay of three weeks in the growing of the hair over this x. The swinging of the apparatus out of the center is also liable to cause a misleading exposure as the radiometer then does not get the full force of the rays.

Bulletin de l'Académie de Médecine, Paris

July 6, LXXIII, No. 27, pp. 1-44

44 Experimental Research with Smallpox Vaccine. (De la variole-vaccine.) Kelsch.
45 *The Transthoracic Wave as Sign of Hydatid Cyst in the Liver. (Le signe du "flot transthoracique" dans les kystes hydatiques de la convexité du foie.) A. Chauffard.
46 Prophylaxis of Cattle Plague. (Prophylaxie de la peste bovine, par l'isolement individuel des [illegible] ey.
47 *Rabbit Eye Implanted after [illegible] (De l'hétéroplastie orbitaire dans le [illegible] othèse.) F. Lagrange.

July 13, No. 28, pp. 45-56

48 Varying Toxicity of Acetylene Gas and Carbon Monoxid for Different Species of Animals. N. Gréhant.

July 20, No. 29, pp. 57-79

49 *Pneumonic Plague at Beyrout. (Etude sur la peste pneumonique observée à Beyrouth en janvier 1907.) H. de Brun.

45. **The Transthoracic Wave as Sign of Cyst in Liver.**—This sign was mentioned in the Paris Letter, July 24, page 308.

47. **Graft of Rabbit Eye After Enucleation of Human Eye.**—Lagrange reports that in 25 cases he has implanted a rabbit eye after enucleation of the eye of a patient, and has been able to follow the outcome to date in 13. The results have been extremely satisfactory, the eye healing aseptically in place and not shriveling more than one-half on the average, never more than two-thirds, the graft answering its purpose admirably in every instance. The engrafted eye shriveled less in the younger patients. He describes his preliminary experimental research and the technic for the operation. In 3 patients, aged 6, 20 and 28, the engrafted eye provided an elastic, living, large and permanent stump, thus rendering the conditions ideal for the artificial eye later.

49. **Pneumonic Plague.**—The epidemic described by de Brun comprised only four cases after the true nature of the atypical pneumonia in question was recognized, but all proved rapidly fatal, as also the few cases retrospectively diagnosed. The difficulty of diagnosing this form of plague when it first appears in a locality is the greatest obstacle in prophylaxis. Certain features of the disease suggest that the pneumonic form of plague is a special septicemic variety with coexisting variable pulmonary or bronchial lesions. This conception of pneumonic plague as a septicemia aids materially in its early differentiation, as also the absence of an initial chill, and sometimes of sharp local pain, or the pain may be experienced in some unusual location, near the apex, in the spine or axilla. The dyspnea is extreme and is accompanied by an indescribable sense of oppression in the chest, and the cough may be incessant, smothered, as if whispered, or there may be no cough at all. The expectoration may be profuse or scanty, and may suggest the sputum of bronchitis, or it may be blood-tinged and foamy, but it never resembles the rusty, tenacious sputum of pneumonia. The intense malaise and headache, pain in the chest, cough, vomiting and extreme prostration may suggest exanthematous typhus, but pneumonia is generally first thought of; the absence of the characteristic auscultation findings is ascribed to an atypical location and the physician waits for the next day to clear up the diagnosis. Then the general symptoms are more pronounced while the local symptoms are no more distinct, and the third day the patient succumbs. On the other hand, once convinced that the pneumonic form of plague is, above all, a septicemia, greater attention is paid to the general symptoms and they supply presumptive evidence in favor of plague; the stethoscope confirms this assumption even before bacteriologic diagnosis.

Grèce Médicale, Syra, Greece

June 1, XI, Nos. 11-12, pp. 25-28

50 The Authentic Authorship of Two Ancient Medical Texts. (Des noms des auteurs de deux anciens textes médicaux.) S. Zervos.

Lyon Chirurgical, Lyons

July, II, No. 2, pp. 129-260

51 Tumors of the Orbit. (22 observations de tumeurs de l'orbite.) E. Rollet.
52 Lymphadenoma of the Rectum. L. Bérard and A. Chalier.
53 Five Cases of Botryomycosis in Man. L. Thévenot and H. Alamartine.
54 Surgical Treatment of Suffocating Laryngeal Papillomas. Sargnon and Barlatier.
55 *Conservative Treatment of Sarcoma of the Long Bones. P. Cavaillon and H. Alamartine. Commenced in No. 1.
56 Best Mode of Access to Heart and Lung. (De l'abord chirurgical du cœur et du poumon.) Muller and Tavernier.

55. **Conservative Treatment of Sarcoma of the Long Bones.**—This article summarizes fourteen cases of sarcoma of the long bones treated by removal of the growth alone and thirty-three cases with resection. The results show that extensive resection of the bones, respecting the nerve and muscle apparatus, is effectual on the arm, but this technic is applicable to the leg only when the weight-bearing strength of the limb will not be impaired. A sarcoma of the femur can be resected without shortening the limb or material impairment of its strength and the same can be done for the fibula. Amputation should be reserved for the severest cases.

Presse Médicale, Paris

July 17, XVII, No. 57, pp. 505-512

57 Value of Tincture of Iodin for Antisepsis of the Skin in Experimental Surgery. E. Gley.

July 21, No. 58, pp. 513-520

58 *Repeated Cesarean Section. (L'opération Césarienne itérative.) Garipuy.
59 *Fats in Gastric Hypersecretion. (Les corps gras chez les hypersthéniques.) A. Martinet.
60 The Light Reflex in New-born Infants. (A quel moment de la vie est susceptible de se produire pour la première fois le réflexe pupillaire à la lumière.) A. Magitot.
61 Brain Extract. (Une antitoxine cérébrale.) M. Page.

July 24, No. 59, pp. 521-536

62 *Post-traumatic Nervous Disturbances. Brissaud.
63 *Death from Post-traumatic Delirium Tremens. E. Forgue and E. Jeanbrau.
64 *Final Estimation of Incapacity from Trauma of the Eye. (Consolidation dans les traumatismes oculaires.) De Lapersonne.
65 Sensory Disturbances and Industrial Accidents. (Troubles de la sensibilité et accidents du travail.) J. A. Sicard.
66 *Measurements of Parts after Industrial Accidents. (Les mensurations chez les accidentés du travail.) P. Desfosses and L. Durey.
67 Necessity for Autopsy after Industrial Accidents. M. Letulle

58. **Repeated Cesarean Section.**—Garipuy concludes from his analysis of the literature on this subject that the obstetrician should aim to perform the later Cesarean section as near to term as possible and yet before commencement of labor as with the onset of labor there is danger of rupture of the old cicatrix. There are usually scar changes and adhesions requiring modification of the classic technic, but the literature does not show that the prognosis has been aggravated by them. Four and even five successive Cesarean operations have been performed in a few cases. The question whether to remove or merely incise the uterus in a later pregnancy must be determined by the strength of the uterus wall; if it shows signs of weakness or cicatricial tissue requires resection, hysterectomy rather than Cesarean section may be advocated, for fear of rupture in a later pregnancy. Adhesions which it is impossible to separate are another argument in favor of rendering the woman sterile thereafter, preferably by resecting the tubes between two ligatures if hysterectomy is not deemed advisable.

59. **Fat in Diet in Gastric Hypersecretion.**—Martinet's experience has confirmed that of others in regard to the great benefit derived in gallstone troubles and gastric hypersecretion from the daily ingestion of from 75 to 150 c.c. of olive oil before breakfast. The only objection is the repugnance to the oil experienced by many patients, and for these he orders the needed fat in the form of fresh milk and cream, fresh butter and bone marrow. The latter is freshly cooked and spread on bread. The substitution of olive oil for butter in cooking the food is an advantage. He has also found almonds a simple and palatable means of supplying the fat; the patient is told to eat from 60 to 80 or 100 gm. of almonds according as they are fresh or old.

62. **Traumatic Neuroses.**—Brissaud passes in review the various communications on this subject at the International Industrial Accident Congress held recently at Rome. The necessity for institutional care for the victims of industrial accidents was emphasized by several speakers; special hospitals where they could receive proper treatment with due regard to rendering the subjective symptoms objective and detecting malingering were advocated. In France it is becoming more and more the custom to hasten legal proceedings, accepting a permanent but comparatively slight impairment of the earning capacity, estimated at 5, 10 or 15 per cent., and to settle damages summarily on this basis without further delay. Windscheid has declared that too large an indemnity deprives the injured of their only means of cure—the resumption of their work.

63. **Post-Traumatic Delirium Tremens.**—Forgue relates an example of death from delirium tremens after a slight fall, which, without this complication, would have been comparatively harmless. The spontaneous pain of the contusion subsided under repose by the second day but then delirium tremens developed, fatal the sixth day. He has witnessed a number of cases of this kind and discusses the question from the standpoint of accident insurance. There can be no question as to the connection between the accident and the development of the fatal complication. The verdict of a Swiss court in a similar case reduced the indemnity on account of the chronic alcoholism, stating that the life expectancy and earning capacity must be regarded as having been much below the normal. French jurisprudence does not accept this view; it disregards entirely the previous condition and seeks to determine merely whether there is a causal connection between the industrial accident and the disability or death of the injured.

64. **Duration of Incapacity in Accidents to the Eyes.**—De Lapersonne states that in 200 cases of industrial accidents to the eyes on which he had to report to the authorities, the incapacity lasted for less than a month in 25 per cent. and up to three months in 50 per cent. and he discusses the various factors affecting the final outcome. Sympathetic ophthalmia, he states, is most liable to develop after penetrating wounds of the ciliary region, with hernia or constriction of the iris, especially when complicated by the presence of a foreign body. Consequently, early diagnosis of the foreign body is of the utmost importance and also its prompt removal, especially if it is lodged in the dangerous ciliary zone. Traumatic cataract always entails more or less industrial incapacity and there is no need to wait for its extraction; he has never found that normal conditions were restored later in cases of this kind, and the settlement of the case need not be deferred in expectation of improvement later.

66. **Measurement of Parts in Cases of Industrial Accidents.**—Desfosses uses in clinical—not precision—examinations a dressmakers' tape measure, a goniometer to measure the angles of flexion and extension of the joints, and a dynamometer to register the effort in pressure and traction. In a number of illustrations he shows the way to use them and the points for measurement of parts, direction, thickness, etc., to have the records uniform for comparison and readily controlled. The results of examination of the victims of industrial accidents should be transcribed as objectively as possible, he emphasizes, as they are to be submitted to various lay parties, and the written descriptions should be accompanied by measurements and a statement as to how the measurements were taken. The comparison between the injured and the sound parts and between the same parts after certain intervals may throw light on the case and exclude malingering by objective data.

Berliner klinische Wochenschrift

July 12, XLVI, No. 28, pp. 1293-1340

68 *Phobias and Anguish States. (Psychopathologie der Angstzustände.) H. Oppenheim.
69 *Cc [illegible] Standpoint of [illegible] nedizinischen [illegible] des Jahres 1907 in Gross-Berlin.) J. Rotter.
70 Experimental Tuberculosis in Guinea-pigs. (Prognose und Incubationsstadium bei experimenteller Meerschweintuberkulose.) H. P. Römer and K. Joseph.
71 *Anatomy, Pathology and Rœntgenology of Pulmonary Tuberculosis. M. Cohn.
72 *M. Stern's Improved Technic for Seroreaction in Syphilis. (Ueber die von M. Stern vorgeschlagene Modifikation der Wassermann- A. Neisser-Bruck'schen Reaktion.) E. Meirowsky.
73 *Sugar in Relation to Formation of Glycogen. (Verhalten und Wirkung des dem Tierkörper einverleibten Traubenzuckers und seine Beziehung z [illegible] L. Süssenguth.
74 *Frequency of Inherited [illegible] I. Heller.
75 Lightning Treatment or [illegible] Funkenbehandlung.) F. Davidsohn.

68. **Psychotherapy.**—Oppenheim replies to Dubois' article, summarized in The Journal, August 7, page 493, endorsing his views but complaining that they do not pay sufficient at-

tention to the morbid anatomy element in anguish conditions. The disturbance is based to a greater or less extent on an abnormal excitability of the centers presiding over vasomotor functioning and the functioning of the viscera. Courage and will power may be enthroned in the brain while anguish and dread tyrannize in the cerebellum. Regard to this fact imposes caution in estimating motives, actions, properties and character manifestations, while at the same time it points the way to effectual physical measures which may restore conditions in the cerebellum to normal. The psychotherapy must be supplemented by the tried and indispensable means of influencing the excessively irritable vasomotor centers; dietetics, outdoor life, hydrotherapy, electrotherapy, gymnastic exercises, etc.

69. **The Appendicitis Collective Inquiry.**—Rotter reviews the 3,016 cases, included in the reports, from the standpoint of treatment, the conclusion being that the principle of early operation—in the first forty-eight hours—has won the victory.

71. **Roentgen Differentiation of Tuberculosis of the Lungs.**—Cohn gives the reasons for the indispensable value of *x*-ray examination in the diagnosis of affections of the lungs, to supplement other diagnostic measures. He says that it is necessary to examine the lung with three forms of exposure: (1) examination of the apices, the hilus region and the diaphragm with a medium soft tube, sagittal, from front and rear; (2) exposure of the apex with a round diaphragm showing the second and third intercostal field, in the ventrodorsal diameter; (3) exposure of the middle part of the lung with the tube at the back.

72. **The Modified Technic for Seroreaction in Syphilis.**—Meirowsky gives the findings in 318 cases tested both with the Wassermann and the Stern technics. The findings paralleled each other except that the Stern technic seems to be more sensitive while it is much simpler. He advises comparative tests with both technics, as he regards the Stern modification as an advance.

73. **Action of Injected Sugar.**—Süssenguth injected about 1 per cent. of the body weight of a 50 per cent. solution of grape sugar in his experiments on rabbits and guinea-pigs, the subcutaneous injection being repeated daily. No toxic action was apparent, and the conditions in regard to glycogen did not seem to be altered in the direction of diabetes. The findings suggest that the sugar in diabetes should not be incriminated for the symptoms to the extent some assume.

74. **Frequency of Inherited Syphilis in Berlin.**—Heller compiled this statistical article for the inauguration of the new asylum at Berlin for children with inherited syphilitic taint. The statistics are very defective, but they show a proportion of from 0.9 to 2.53 per cent. children with inherited syphilis among the younger inmates of the hospitals and asylums of Berlin. The unfavorable prognosis of inherited syphilis changes wonderfully for the better when it is recognized in time and treatment instituted at once. Welander's success in the similar institution at Stockholm encourages efforts in this line. Only two of the children inmates of his home have died since it was founded nine years ago, and an intercurrent disease was responsible for these fatalities.

Deutsche medizinische Wochenschrift, Berlin

July 15, XXXV, No. 28, pp. 1217-1256

76 *Treatment of Bronchiectasis. G. Hoppe-Seyler.
77
78 Schlippe.
own Origin. (Okuläre Ursache.) Halben.
79 not Taking the Ziehl Stain. G. Liebermeister.
80 Form of Lepra Bacillus not Taking the Ziehl Stain. E. Arning and F. Lewandowsky.
81 *Indicati ncy in Diabetics. (Indikationer chwangerschaft bei zuckerkrank
82 *Hyperer Treatment of the Urethra. (Die Harnröhre mit heissen Sonden.)

76. **Treatment of Bronchiectasis.**—Hoppe-Seyler lays great stress on the prophylaxis of bronchiectasis and urges that this should be borne in mind in all cases of bronchitis, especially in the aged. Every effort should be made to ensure complete evacuation of the secretion from the air passages. In the elderly the reduced sensitiveness of the bronchi, the less elastic thorax and lungs and the weakness of the chest muscles, all cooperate in preventing ample expectoration. Such patients should make copious use of stimulant expectorants, and they should be made to change their position often, reclining at times horizontally or with the pelvis raised to promote expulsion of the secretions. When resolution drags in pneumonia, the patients should use breathing exercises and lie on the sound side to prevent consolidation and stiffening of the lung tissue which hampers evacuation of the bronchial secretions. Early evacuation of pleural effusions will aid in preventing development of adhesions. Chronic bronchitis should be healed or kept under control with turpentine and creosote derivatives. Treatment of the cylindrical form of bronchiectasis is the same as of chronic bronchitis; benefit may be derived from breathing exercises supplemented by compression of the lower part of the chest; this the patient can do himself by putting his hands on the sides of his chest, and bending far over, as if bowing low, the forcing up of the diaphragm in consequence thus exercising the lower part of the lung. In sacculated bronchiectasis of the lower lobe it is difficult to evacuate the secretion, but this can be promoted by reclining slanting, the shoulders low, or even the true Trendelenburg position. This is sometimes surprisingly effectual and the patients should train themselves to recline in this slanting position an hour or so morning and night or even longer, changing from side to side until the position is found in which most copious evacuation occurs. It can be promoted by compression of the region involved. If the patients are not too weak, out of door exercise and climbing will benefit by the greater respiratory demands. Inhalation of fumes of turpentine poured on boiling water may aid in softening and expelling the sputum. If operative measures become necessary, his experience speaks in favor of mobilization of the chest wall by extensive resection of ribs, thus allowing it to sink in and compress the lung, closing up the formerly gaping cavities. This should be followed by inhalations and breathing exercises, opening into and draining the cavities as the last resort.

81. **Pregnancy in Diabetics.**—Offergeld states that 30 per cent. of 57 diabetic women died in coma during or soon after a childbirth, and 14 others died during the fourteen months following, either from the diabetes or from complicating pulmonary tuberculosis—a total mortality of 50 per cent. in 57 cases; 51 per cent. of the children were stillborn, 11 per cent. died soon after birth, and 7 per cent. died in infancy from hydrocephalus or diabetes—a mortality of over 66 per cent. In the 25 cases in which the fetus succumbed, 17 of the women died in coma. It is thus evident that the diabetes and the pregnancy have a most unfortunate influence on each other, but it is possible to avert evil consequences in the mild and moderately severe cases in many instances by dietetic measures, bearing in mind the requirements of the growing fetus in respect to needed calories. If the diabetes becomes aggravated by the pregnancy, the tolerance reduced, the patient losing weight, and the subjective symptoms becoming aggravated, the woman should be delivered from the stress of the pregnancy; acidosis alone does not indicate this unless it is constantly accompanied by albumin and tube casts. The course in previous pregnancies is an important guide to treatment. Coma is generally preceded by certain premonitory symptoms, acidosis and increase in the ammonium salts, and consequently the latter may prove of decisive importance under certain conditions. Coma once installed, the fetus inevitably succumbs and as the coma determines the outcome there is no necessity for interrupting the pregnancy, but if labor is under way the woman should be delivered rapidly and with the least possible effort. Diabetic parturients do not seem more exposed to infection or more disposed to hemorrhage than normal women. General anesthesia should be avoided if possible, but ether should be given the preference if such becomes necessary.

82. **Hot Sounds in Hyperemic Treatment of Urethritis.**—Porosz uses a sound arranged to permit a current of hot water to flow through it without escaping into the urethra. The hyperemia thus induced softens and loosens the tissues and aids in dilatation of the stricture.

Deutsche Zeitschrift für Chirurgie, Leipsic

June, XCIX, Nos. 1-2, pp. 1-199

83 *Pathologic Histology and Clinical Experiences with Varicocele. E. K. Istomin.
84 *Transplantation of Vessels and Entire Organs. (Transplantation von Gefässen und ganzen Organen.) Borst and Enderlen.
85 *Operation for Recurrence of Trigeminal Neuralgia. (Rezidivoperation bei Trigeminusneuralgie.) K. Budinger.
86 *Pathogenesis and Treatment of Felon. (Knochenpanaritien.) W. Ohm.
87 *Case of Gangrene of the Leg after Constriction by Momburg's Belt. (Fall von Gangrän des Beins nach Unterbindung der Arter. femoralis unter Momburgscher Blutleere.) F. Kempf.

83. **Varicocele.**—Istomin reviews the anatomy and histology of the spermatic veins and the importance of mechanical factors in the origin and the cure of varicocele. A suspensory and dietetic measures should be tried first in all cases; if they fail, an operation should be advised, and this should aim to form an "internal suspensory." Resection of the vein is justified only after other measures have failed to induce a permanent cure. The resection should not be done in the scrotum but in the inguinal ring. He warns that the wearing of a suspensory may increase a tendency to hypochondria, and that extreme hypochondria should contraindicate an operation for the time being, as such surgery on the mentally unsound may result in harm both for patient and surgeon. In conclusion he advocates a technic which he found beneficial in the two cases in which he has applied it. Through a small longitudinal incision in the tunica vaginalis at the inguinal ring he passed a thread through the spermatic cord and through the cellular tissue on the anterior surface of the pubis just below the ring, tying it there while two other sutures held the tunica vaginalis to the external and internal pillars of the inguinal ring. The central portion of the spermatic cord was readily reduced through the inguinal ring while the sutures held the testis at the desired height and they were in such firm tissues that there was no danger of their pulling out. A bibliography of 193 titles is appended.

84. **Transplantation of Entire Organs.**—In 7 animals the carotid and thyroid gland were reimplanted in the same dog and in 6 were transplanted into another dog, while in 7 an artery and kidney were reimplanted in the same animal and in 6 in another animal, with 5 operations on vessels alone. The early and ultimate findings are listed; they show that transplantation on the same animal alone promises complete restoration of function.

85. **Trigeminal Neuralgia.**—Büdinger reports the complete cure for three and a half years to date after an operation for recurrence of trigeminal neuralgia a few months after a primary peripheral and ineffectual operation. The oval foramen was opened and the neuroma-like enlargement of the central stump was released from its confined bed and the nerve resected from the base of the skull to the ganglion. The oval foramen was then plugged with bone to prevent regeneration.

86. **Treatment of Felon.**—At Bier's clinic a felon is regarded as a traumatic inflammation originating in the subcutaneous tissue from invasion of bacteria through some possibly insignificant lesion, but soon involving the periosteum. Under constriction hyperemia the process healed in an average of 23.5 days in 33 cases; under suction hyperemic treatment in 35.5 days in 20 cases, and in 40.3 days in 12 cases treated by ordinary operative measures. The induced hyperemia reduces the pain at once and permanently and the bone is protected against sequester formation or the sequester heals into place again. The functional outcome was also better under conservative than operative measures. Skiagrams of a number of the cases are given, the final conclusions being in favor of a minute incision with constriction or suction hyperemia as superior to all other methods of treatment, assisting the organism in its struggle against the infection, promoting natural healing processes and best ensuring a good functional outcome.

87. **Gangrene After Application of Momburg Belt to Arrest Hemorrhage.**—The gangrene developed a week after resection of 3 cm. of the femoral artery on account of injury from a pitchfork, a handbreadth below Poupart's ligament. The patient was a young man and he had lost much blood before the operation. It might have been better, Kempf remarks, if collateral circulation had been promoted by saline infusion before attempting the operation or afterward, but this was not deemed necessary at the time. The operation was completed in twenty minutes, but as the tourniquet first applied interfered with the operation, the rubber tube was wound around the waist according to Momburg's technic. It gave no better results, however, than an ordinary tourniquet from the standpoint of development of gangrene.

Medizinische Klinik, Berlin

July 11, V, No. 28, pp. 1029-1067

88 *Diagnosis of Tuberculous Etiology in Ophthalmology. W. Löhlein.
89 Immunity to Tumors. (Ueber Immunität gegen Geschwülste.) E. v. Dungern.
90 Treatment of Surgical Tuberculosis with Marmorek's Serum. W. E. Sikemeier.
91 *Diffuse Peritonitis after Appe[illegible] und Therapie der freien ausgedeh[illegible] nach [illegible]
92 [illegible] G[illegible]
93 [illegible] of [illegible] Prognosis of Anemia. (Wert de[illegible] des Blutes für Diagnose und Progn[illegible] Einwirkung des Arsenwassers.) F. Brenner.
94 Viscosity of the Blood. (Viskosität des Blutes beim Gesunden und Kranken.) G. Jorns.

July 18, No. 29, pp. 1068-1104

95 *Treatment of Trigeminal Neuralgia. A. Fuchs.
96 *Scarlatiniform Exanthem with Acute Tonsillitis.* (Scharlachähnliche Exantheme bei akuten Halsentzündungen.) F. Reiche.
97 Traumatic Meningitis from *Streptococcus mucosus*. R. Rube.
98 Treatment of Acute Otitis to Prevent its becoming Chronic. A. Hillebrecht.
99 Importance of Balneologic Research for General Practice. (Bedeutung der neueren balneologischen Forschungsergebnisse für die Praxis.) P. Mayer.
100 Prevention of Fluctuations in Tension of Galvanic Current. (Ueber Spannungsschwankungen der von Gleichstromdynamos zu elektrotherapeutischen Zwecken—Galvanisation—entnommenen Ströme und deren Beseitigung mittels Kondensators.) A. Eulenburg.

88. **Diagnosis of Tuberculous Eye Affections.**—Löhlein declares that the new local tuberculin tests show that tuberculosis is a much more frequent and important factor in eye affections than has been previously recognized. He disapproves completely of the ocular tuberculin test as liable to do damage. The preferable technic seems to be to apply first the cutaneous test; a negative reaction seems to exclude tuberculosis. The subcutaneous technic is the most valuable and reliable. The cutaneous test first, followed by the subcutaneous allows surprising insight into the nature of ocular lesions.

91. **Treatment of Peritonitis.**—Bertelsmann discusses mainly the diffuse peritonitis following appendicitis, commenting on the fact that the serous surface of the peritoneum covers an area of 1.7 square meters and yet it does not absorb bacteria, when inflamed, while tendon sheaths and joints take up bacteria in swarms and pour them into the blood. It can not be a mere coincidence that Kanon, Libmann and Bertelsmann found no bacteria in the blood in fully 100 cases of intense peritonitis. The collapse can not be due to the bacteria but merely to the toxins; they are responsible for the local injuries, the paralysis of the bowel and the tympany. The toxins act on the vasomotors in the splanchnic region, paralyzing them until the organism becomes exsanguinated by the pouring of all the blood into the abdominal vessels. The heart fails because it has nothing to pump, and death is the result of the paralysis of the vasomotor center and not of paralysis of the heart. This is of immense importance in treatment, as saline infusion will start up the heart and force along the blood stagnating in the splanchnic region. Before the operation a saline infusion should be made as a preventive measure; otherwise the opening of the abdomen releases the paralyzed vessels of the splanchnic region from pressure, allowing them to suck up the rest of the blood which has been keeping the patient alive. This is the cause of the "peritoneal collapse." Bertelsmann is convinced that the patient can be tided past the stage of collapse in almost every case of peritonitis by intravenous infusion of from 3 to 4 quarts of salt solution with or without 7 drops of adrenalin. The saline infusion permits longer operations. In 72 cases of severe peritonitis in the last five years, 80 per cent. of the patients recovered under treatment along these lines, the operation concluded by stimulating peristalsis with enemas and local heat, finishing with lavage of the stomach if necessary.

95. **Treatment of Trigeminal Neuralgia.**—Fuchs has obtained good results in 16 cases of exceptionally severe trigeminal

neuralgia and also in 100 moderate cases by treatment with aconitin and vigorous purgation. The aconitin seems to have actual specific efficacy in trigeminal neuralgia. He prefers to give it in the form of eight or ten pills containing a maximum of 0.002 gm. for the daily dose. It is supplemented with calomel, 15 grains in ten doses in ten hours (0.1 gm. per dose), continuing afterward with a laxative water three times a day. In giving the aconitin he inquires constantly for signs of intoxication, paresthesia in tongue, lips or hands, mostly in the ulnar region, but has never observed anything of the kind, probably on account of the vigorous purgation which he regards as the greatest advance in the treatment of neuralgia in the last quarter century. In 14 of the above 16 cases the neuralgia had recurred after peripheral resection. The pain is probably of central origin in certain cases which explains the inefficiency of treatment, even of gasserectomy. On the other hand, peripheral resection and injections may induce temporary benefit.

Münchener medizinische Wochenschrift

July 13, LVI, No. 28, pp. 1409-1456

101 Diagnosis and Treatment of Subphrenic Abscess on Left Side. Meisel.
102 *Mobilization of Chest Walls. (Ueber Mobilisierung des Brustkorbes.) J. Fränkel.
103 *Clinical Hypersusceptibility. (Klinische Ueberempfindlichkeit. II. Oertliche Hautreaktionen auf Atoxyl.) E. Moro and H. Stheeman.
104 Importance of Precipitation of Lecithin with Cancer. (Bedeutung der Lezithinausflockung bei malignen Tumoren.) F. Schenk.
105 *Ocular Typhoid Extract Reaction in Typhoid. (Die Chantemessesche Ophthalmoreaktion bei Typhuskranken.) J. K. Beckers.
106 *Treatment of Suppurative Processes with Antiferment. (Ferment- und Antifermentbehandlung eitriger Prozesse.) A. Kantorowicz.
107 Implantation of Cornea from the Horse in the Cornea of the Rabbit. (Zur Keratoplastikfrage.) Salzer.
108 Paratyphoid Infection. (Zur Kasuistik der Paratyphusinfektion.) A. Bingel.

102. **Mobilization of the Thorax.**—This communication from Bier's clinic at Berlin calls attention to the importance of mobilizing the thoracic vertebræ in attempts to expand and mobilize the chest. This element in the mobilization has been rather overlooked hitherto; the purpose is admirably accomplished by Klapp's creeping exercises. This method was described in THE JOURNAL, Feb. 1, 1908, page 410, as giving good results in scoliosis. It answered the same purpose as Freund's chondrotomy to mobilize the superior aperture as a means of influencing apical processes. The creeping method is deserving of wide application outside of the treatment of scoliosis. The exercise found most effectual for mobilizing the thoracic vertebræ starts with lordosis, the attitude similar to that of a creeping tiger or dachshund. The patient kneels, the thighs perpendicular, the elbows bent so that the arms imitate the bow-leg position of the dachshund while the head is bent far back. The pelvis is thus above the shoulders and the thoracic portion of the spine is in lordosis; this position must be maintained during the creeping. The arm is advanced and stretched before the hand touches the floor. This hand then turns and the elbow is bent as the trunk is advanced until the upper arm forms a right angle with the trunk. The arm thus forms the axis over which the thoracic vertebræ are levered by the drawing forward of the other arm, the scapula of the supporting arm forming the fulcrum of the lever. This exercise loosens up the thoracic vertebræ and spreads the ribs apart, and corrects torsion of the spine if present. The thorax expands more, the more correctly the lordosis of the thoracic vertebræ is localized during the sideward bend. The expansion of the chest under the influence of this creeping exercise can be followed with the *x*-rays. A number of such skiagrams are to be published in the transactions of the recent congress of orthopedic surgery at Berlin. The expansion of the chest provides better conditions for the large vessels and lungs, and is an important aid in the prophylaxis of disturbances in the circulation and of tuberculous apical processes.

103. **Local Cutaneous Reaction to Atoxyl.**—Moro noticed a local reaction in children injected with atoxyl; it resembled the cutaneous tuberculin reaction and paralleled it in 82 per cent. of the positive and 85 per cent. of the negative primary reactions to this Pirquet test. Repeated injection gave a more intensive and more rapid reaction than the first in 6 of 13 children injected several times. The other 58 children were given only a single injection.

105. **The Ocular Typhoid Reaction.**—Beckers reports application of Chantemesse's ocular typhoid toxin reaction in 30 patients with various affections and 8 typhoid patients. The instillation of a minute drop of typhoid toxin caused no reaction in 30 non-typhoid patients and none in the healthy, but there was a specific reaction in 7 of the 8 typhoid patients and in 6 out of 9 typhoid convalescents. These experiences confirm the specific importance of the test when applied with minute amounts; he does not use more than half the dose that Chantemesse recommends.

106. **Antiferment Treatment of Suppurative Processes.**—This communication from Garré's clinic at Bonn lauds the antiferment treatment of abscesses as a valuable measure. The principles were described in THE JOURNAL, Feb. 6, 1909, page 516. Müller's discovery of the proteolytic ferment in the leucocytes showed that the latter and their enzymes have an injurious action in an abscess; the excess of ferment breaks down the tissues, doing more harm than the bacteria themselves. The incision evacuating this excess of ferment acts as effectually as the antiferment which neutralizes the ferment, but the latter penetrates into the abscess walls, *protecting* the already infiltrated tissue from destruction by the leucocyte ferment while the defensive forces of the body attend to the destruction of the bacteria. The antiferment treatment thus protects the leucocytes from autolysis and protects the tissues from heterolysis by the leucocytes. The aim in tuberculous processes is just the reverse; here there is deficiency of the ferment, and the indication is to supply it from without. Trypsin has been used for the purpose as it is so closely allied to the leucocyte ferment and so readily obtainable. For the antiferment, Garré found that hydrocele fluid answered the purpose admirably. The results of this method of treatment are immediate arrest of the secretion, confirming the fact that the free ferment is the irritation that kept up the secretion. This, he asserts, causes us to revise our views in regard to laudable pus. Kantorowicz gives several examples of the effect in localized abscesses. In mastitis, furuncles and phlegmons the results were disappointing as the indispensable condition—direct contact between the living ferment and the antiferment—can not always be realized in these cases. The trypsin injections in the cold abscesses answered the desired purpose except in bone processes. The trypsin is indifferent to bone, and consequently chemotactic iodoform is more efficient than trypsin in bone lesions. The trypsin also proved effectual in cleaning up wounds; necrotic scraps were thrown off more rapidly, but this effect was observed only in the drier forms, never when there was much suppuration. The whole antiferment conception modifies previous views in regard to suppuration in many points, he adds, but the success of the treatment under proper conditions will convert the most skeptical.

Therapie der Gegenwart, Berlin

July, L, No. 7, pp. 313-360

109 *Acute Perisigmoiditis with Effusion. H. Strauss.
110 Oxygenated Baths. (Studien über Sauerstoffbäder.) F. Scholz.
111 *Increased Uric Acid Production from Coffee and Methyl-Xanthin in the Healthy and in the Gouty. (Harnsäurevermehrende Wirkung des Kaffees und der Methylxanthine.) Besser.
112 Treatment of Certain Forms of Heart and Kidney Disease. (Zur Therapie gewisser Herz- und Brightischer Krankheiten.) H. Naegeli and P. Vernier.
113 *Permeability of Renal Filter. (Dichtigkeit des Nierenfilters.) J. Brodzki.
114 *Anesthetic and Antiphlogistic Action of Guaiacol. Hecht.
115 Successful Conservative Treatment of Extreme Prolapse of Rectum. (Ueber einen konservativ behandelten Fall von hochgradigem Mastdarmvorfall.) K. Bieling.

109. **Acute Perisigmoiditis.**—Strauss relates some case-histories of acute inflammation of the serosa of the sigmoid flexure, the syndrome having as great clinical importance, notwithstanding its rarity, as perityphlitis, which it much resembles. The anamnesis is of importance, especially a history of chronic diarrheic conditions and signs of ulcerative colitis; also a tendency to coprostasis, especially when alternating with diarrhea. Differentiation is important for treatment as the chief indication is to empty the colon and cure the pre-

existing ulcerative colitis if such exists; otherwise the main reliance is on strict bed rest, light fluid diet and local application of ice and morphin. Surgical intervention is not so promptly necessary as in an appendicitic process, at least in the endogenous cases, as a rule. In two such cases on record, the acute endogenous exudative perisigmoiditis healed after perforation into the intestine, but in one of his fatal cases peritonitis followed the perforation. In considering the indications it must be borne in mind that in the majority of cases the disturbance is secondary to appendicitis.

111. **Coffee in Production of Uric Acid.**—Besser relates research which confirms the fact that part of the caffein and theobromin is eliminated as uric acid, and consequently that coffee must be included in the purin-containing substances injurious in the diet of the gouty.

113. **The Permeability of the Renal Filter.**—Brodzki expatiates on the importance of throwing light on dietetic questions by pathologic experiments in order to obtain data for applying dietetic factors from a therapeutic point of view. For this purpose he has been giving 20 or 25 gm. (from 300 to 375 grs.) milk sugar in water in the morning in forty cases of various kidney affections, keeping this up for ten or fourteen weeks. In the cases with a tendency to much albuminuria the amount of urine increased and the edema and albuminuria became reduced, which he ascribes to the influence of the milk sugar in great measure. There was little, if any, increase in the reducing property of the urine in these cases, but in the others with only moderate glycosuria the reducing property rapidly increased. In a few cases of stationary contracted kidney the increase in the specific gravity was evidently also a result of the milk sugar.

114. **Guaiacol as an Anesthetic and Antiphlogistic.**—Hecht regrets that guaiacol is not used more for external application as its properties deserve. He reviews its history in local treatment of neuralgia, neuritis, gout, chronic rheumatism and traumatism, in the form of a salve, and for application to the surface of the chest in lung, pleura and febrile affections. He advocates a 10 per cent. solution or salve and reports excellent results from it in various cutaneous lesions, including erysipelas, furuncles and herpes zoster. There are no untoward by-effects unless too large doses are used, over 1.5 or 3 gm. (22.5 or 45 grs.).

Wiener klinische Wochenschrift, Vienna

July 15, XXII, No. 28, pp. 989-1022

116 *Determination of Anaphylactic Antibody in Serum of Persons with Cancer. (Nachweis eines gegen das eigene Karzinom
gerichteten -ers im Serum von
Krebskranke: rkungen zu diesem
Befunde.) I
117 *Several Years' Injected in 1901-02
with Tuberculin for Diagnostic Purposes. K. Franz.
118 *Porges' Precipitation Reaction Serum. (Ueber die Ausflock-
ungsreaktion nacl
119 Frequency of Helm Cancer.
(Häufigkeit von des Ver-
dauungstraktus.)
120 *Transient Painful Pseudoparalysis in Infants. M. Turnowsky.
121 Importance of Rhinology and Laryngology for Internal Medicine. (Bedeutung der Rhinologie und Laryngologie für die interne Diagnostik und Therapie.) E. Glas.

116. **Anaphylactic Seroreaction with Cancer.**—Pfeiffer and Finsterer confirm the constant occurrence of the anaphylactic drop in the temperature in their experimental research, and report further experiments with guinea-pigs treated with carcinoma juice. The results show that in the course of a cancer antibodies develop which induce anaphylaxis when injected into guinea-pigs. Guinea-pigs untreated or previously treated with normal human serum show no signs of anaphylaxis when injected with juice from carcinoma tissue. On the other hand, guinea-pigs injected forty-eight hours before with serum from the cancer patient and then injected with the cancer juice display severe anaphylactic symptoms, among others, the characteristic and easily measured anaphylactic drop in temperature. The anaphylactic shock occurs not only with the serum of the cancer patient from whom the juice was derived, but also with serum from other carcinoma patients. The serum in cancer cases, therefore, is distinguished from normal serum by the presence of anaphylactic antibodies. This antibody injected into the peritoneum of the guinea-pig transmits a passive anaphylaxis demonstrated in the drop of temperature when cancer juice is injected, which may prove to have differential value. The discovery of this anaphylactic property in a patient with tumor confirms the diagnosis of malignant disease. If the anaphylactic condition permanently vanishes after removal of the tumor the cure may be regarded as definite. Reappearance of the anaphylactic antibody should be an indication for renewed intervention. It is possible that the discovery of this antibody may throw light on the nature of cancer. The hypersusceptibility revealed by the presence of an anaphylactic antibody explains the unrestricted growth of the tumor and the possibility of metastasis—not only the serum but all the cells and tissues become hypersusceptible while the lack of this with benign tumors explains their inability to spread. If these premises are correct, the aim in treatment of cancer must be to put an end to the anaphylactic condition. This would prevent the spread of the malignant disease and influence the cancer without surgical intervention.

117. **Seven Years' Observation of 1,000 Soldiers After the Tuberculin Test.**—Franz reports the subcutaneous tuberculin test applied to a thousand recruits during 1902; the Hungarians gave 38.7 per cent. positive responses and the Bosnians from 61 to 76 per cent. None but the more robust was tested and only a small proportion of those giving a positive response have shown any signs of tuberculosis during the years since, only 46 during the first three years and 18 in the fourth; a total of 64 cases of clinical tuberculosis in 575 responding positively out of 1,002 tested. His experience further shows that the test with 0.003 gm. of tuberculin is not enough to reveal a latent tuberculous process in many cases by subcutaneous application. He is convinced that if he had used 0.01 gm. he would have obtained as many positive findings as Naegeli obtained in cadavers.

118. **Porges Precipitation Reaction in Syphilis.**—Schwarzwald has applied this test in 302 cases of syphilis with 22 controls and commends it as a simple and easy technic for differentiation in dubious cases. He used 0.5 per cent. solution of sodium glycocholate and advocates this test first and the Wassermann test only when the first gives a negative response.

120. **Transient Painful Infantile Pseudoparalysis.**—Turnowsky has encountered six cases of this affection during the last fifteen years. The children were from 15 months to 4 years old and the paralysis of the leg and arm came on suddenly with severe pain but no fever. The child dragged the limb and screamed when it was touched. The paralysis vanished in from one to five days as suddenly as it came on, but recurred three times in the course of a month or six weeks in 2 cases. He reviews the literature on the subject with the conflicting views in regard to the origin of the trouble; he explains it as a sudden slight dislocation in a joint by some abrupt movement, the dislocation being too slight to be detected by external examination.

Zeitschrift für klinische Medizin, Berlin

LXVIII, Nos. 3-4, pp. 177-348. Last indexed June 12, p. 1965

122 Gas and Corpuscle Content of Blood Mainly Responsible for its Viscosity. (Zur Viskosität des Blutes.) H. Adam.
123 *Pathology of Vegetative Nervous System. II and III. H. Eppinger and L. Hess.
124 Alternating Pulse. (Wesen des Herzalternans.) T. Rehberg.
125 *Testing of Pancreatic Secretion and its Importance for Diagnosis. (Zur Prüfung der Pankreassekretion.) E. von Koziczkowsky.
126 *Action of Fever on the Course of Infection. (Wirkung des Fiebers auf den Verlauf der Infektion.) V. Barankeieff.
127 Purin Metabolism during Fever. (Zur Kenntniss des Purinstoffwechsels im Fieber.) D. Jonescu and V. Grünberger.
128 Iron Metabolism. (Untersuchungen über den Eisenstoffwechsel.) H. Schirokauer.
129 *Auscultation of Bronchial Breathing over the Thorax as Sign of Mediastinal Tumor or Aneurism. (Die Auskultation des
ax als Zeichen einiger Medi-
o.
130 sis in Syphilis. (Ueber die
bei Lues.) A. Braunstein.

123. **Pathology and Therapeutics of the "Vegetative" Nervous System.**—The Journal, Oct. 24, 1908, page 1475, mentioned previous research by Eppinger on the opposite pharmacologic action of certain drugs on different individuals. Certain persons are susceptible to the action of pilocarpin and atropin, both of which act on the vagus sustem, the former stimulating, the other inhibiting it, while other persons are susceptible

to adrenalin which acts on the sympathetic nervous system. To date no drug is known which has an inhibiting influence exclusively on the sympathetic system, similar to the inhibiting action of atropin on the vagus. By testing the action of pilocarpin and atropin and adrenalin it is possible to obtain an insight into the functioning of organs innervated by the vagus or sympathetic systems and Eppinger reviews the findings in a number of morbid conditions such as paroxysmal tachycardia, digestive reflex neuroses, Gowers' vasovagal attacks, etc. He cites two examples to show how in "vagotonic" individuals 0.0075 gm. of pilocarpin injected subcutaneously induces intense salivation, sweating and lachrymation with redness of face and neck, and 0.00075 gm. atropin sends the pulse from 80 up to 138, while 0.0075 gm. adrenalin fails to induce its usual effect of glycosuria and polyuria. In two examples of the "sympathecotonic" type, 0.01 gm. of pilocarpin and 0.001 gm. of atropin had no influence on saliva, sweat, tear secretion or pulse, but 0.001 gm. adrenalin induced pronounced glycosuria (7.93 gm. in the twenty-four hours' urine) and the amount of urine increased from 1200 to 2300 c.c. and from 1200 to 2800 c.c. In neuroses of the vagus minute amounts of "vagotropic" drugs have a marked therapeutic influence. In all his experience he has never found an individual who presented a pronounced reaction both to pilocarpin and to adrenalin. The "vagotonic" are more numerous among the young while with increasing age the "sympathecotonic" type predominates. Exophthalmic goiter is studied in detail from the standpoint of these pharmacologic functional tests, showing the difference in the symptoms and therapeutic response accordingly as the individual is vagotonic or sympathecotonic.

125. **Secreting Function of the Pancreas and Its Importance for Diagnosis.**—This communication relates functional tests of the pancreas undertaken with eighty patients with various affections. The patients drank 150 c.c. of oil, or 250 gm. of cream, fasting in the morning and sat still for forty-five minutes, after which the stomach content was siphoned out. In 43 of the 80 cases trypsin was found directly in the stomach content and in 29 others after the excess of acid had been neutralized with magnesia. In only 8 of the total number was there no trace of trypsin to be detected; these were patients with inoperable gastric cancer, diabetes, pernicious anemia or some severe liver affection. The smallest proportions of trypsin were found in patients with these affections or catarrh of the small intestine, cholelithiasis or diabetes insipidus. The largest proportions were in patients with little if any free hydrochloric acid in the stomach content. The trypsin was always in the activated form, showing that it had been mixed with intestinal juice. The test is more instructive when a series of examinations are made, constant absence of minute proportions of trypsin suggesting severe functional disturbance in the pancreas, while large amounts exclude such. The oil or cream breakfast also allows insight into the functioning of the liver from the proportion of bile found in the stomach content, and it reveals the admixture of intestinal juice and trypsin and thus explains anacid conditions. The presence of trypsin also is an index of the motor functioning of this part of the digestive tract. The research related shows further the importance of excluding fat from the test breakfast when examining merely for the chemical and motor functioning of the stomach.

126. **Action of Fever on Course of Infections.**—Barankeieff induced fever in rabbits by puncture of a heat center and then inoculated them with some mildly infectious agent, the results demonstrating that fever reduces materially the resisting power of the organism so that it yields to invasion and proliferation of bacteria of greatly attenuated virulence. It also reduces the immunity possessed naturally by rabbits against certain germs and the febrile organism also displays an exceptional tendency to autoinfection.

129. **Auscultation of Bronchial Respiration Over the Thorax as Sign of Mediastinal Lesion.**—D'Amato reports three cases of solid tumors in the mediastinum and five of aneurism or other lesion in which bronchial respiration was heard not only over the manubrium but over the body of the sternum and at times over the heart region, but less distinct. It was also heard diffuse over the clavicles, and most pronounced over the spine, even with tranquil breathing, with a much louder tone and over a much wider area than in normal conditions. In one case of solid tumor the bronchial respiration was heard over both the anterior chest walls. The positive auscultation findings over the spine with these mediastinal lesions has considerable differential importance both for children and for adults; the greatest intensity of the respiration sound is directly over the spine, not in the scapulovertebral line. Such findings in the apparently healthy do not disprove their differential importance as there may be some unsuspected lesion in the peribronchial glands, possibly long healed over. The positive findings are not constant with all mediastinal tumors, etc., but depend on their location and the consequent displacement of the trachea and bronchi.

Zentralblatt für Chirurgie, Leipsic

July 17, XXXVI, No. 29, pp. 1009-1040

131 Technic of Endothoracal Resection of the Esophagus. M. Tiegel.
132 *Method of Operating on Femoral Hernia. (Neue Methode für die operative Behandlung der Femoralhernien.) Abrashanoff.

July 24, No. 30, pp. 1041-1072

133 *Ligation of Veins for Suppurative Portal Thrombosis after Appendicitis. Wilms.

132. **Operative Treatment of Femoral Hernia.**—Abrashanoff ties a long silk suture thread around the neck of the hernial sac after it has been emptied and draws each end of the thread out through the abdominal wall about three-quarters of an inch above Poupart's ligament, the distance between the emerging points of the ends of the thread being from one-half to three-quarters of an inch. Poupart's ligament is them drawn up and back to expose the posterior margin of the horizontal branch of the os pubis, and each end of the thread is passed through the triangular ligament. As the ends of the threads are then tied together, the hernial sac is drawn up tight and the peritoneum is also stretched, while the abdominal wall is drawn down to the os pubis on which Poupart's ligament rests. By this means the femoral canal is practically obliterated throughout its entire length. He has performed this operation in eight cases and commends it as effectual and stable. The technic is shown in three illustrations.

133. **Ligation of Veins in Suppurative Thrombosis of the Portal Vein.**—Wilms tied off the veins in the mesentery connected with the cecum and appendix and was surprised to find that all the serious symptoms were arrested at once and the patient rapidly recovered. The principle is the same as for ligation of the ovarian veins in puerperal pyemia, but in suppurative portal thrombosis the danger of metastasis in the liver is especially imminent. He is not aware of a single instance of spontaneous recovery in such cases with recurring rigors. All his patients with this syndrome succumbed, but it is becoming less frequent now that early operations in appendicitis forestall the development of the venous thrombosis. In his case an abscess in the region of the cecum in a man of 42 had developed in the course of ten days and chills occurred daily after evacuation, with temperature over 104 the fourth day. In the triangle formed by the junction of colon and cecum two small arteries were tied separately and the veins ligated in two bunches, the line of ligation forming the hypothenuse of a triangle of which the junction of colon and cecum formed the other two sides. The temperature dropped at once and no further chills were observed while the circulation in the intestines showed no signs of disturbance and stool was passed the next day. The operation is effectual only before infectious emboli have reached the liver; the chills may indicate merely toxic action. Even if a few bacteria have entered the circulation the organism in many cases is able to cope with them. It does not succumb until its power of producing antitoxins has become exhausted.

Zentralblatt für Gynâkologie, Leipsic

July 17, XXXIII, No. 29, pp. 1009-1024

134 The Rachiotome and Rachiotomy. (Rachiotom.) O. Küstner.
135 Bacteriologic Diagnosis of Puerperal Fever. W. Sigwart.
136 Influence of Delivery on Muscular Supports of Pelvic Floor (Einfluss der Geburt auf den Levatorspalt.) Pankow.

July 24, No. 30, pp. 1041-1064

137 Instrument for Measuring the Diagonal Conjugate. C. Hoerder.
138 *Mishaps with Spinal Anesthesia. (Unglucksfälle bei Lumbalanästhesie.) J. Risch.

139 *[illegible] in Gynecology, etc. (Zur Frage der [illegible]n Nebennierenpräparaten.) M. Neu. [illegible]dung des Suprarenins.) Braun.
140 [illegible] Cystomas Removed without Interfering with Pregnancy. T. Petri.

138. **Mishaps with Spinal Anesthesia.**—Risch reports from Franqué's clinic at Giessen four threatening mishaps with spinal anesthesia out of the 315 cases in which this method has been employed since 1908. Two of the patients, women, were finally revived but the other two succumbed. In the first there was complete arrest of the respiration and in the second heart collapse, while in the fatal cases the heart action stopped abruptly and permanently. The women in these fatal cases were obese and had lost much blood; the heart in one was flabby and inclined to fatty degeneration while the cardiovascular system in the other seemed to be sound except for slight arteriosclerosis. The experiences at this clinic with spinal anesthesia in 14 cases of Cesarean section were gratifying, but the mishaps have convinced Franqué that spinal anesthesia must be restricted to certain specially adapted cases, and that complications on the part of the vascular system or anemia practically contraindicate it. Bier's latest report on spinal anesthesia states that we must reckon with one death to each 400 or 500 spinal anesthesias.

139. **Suprarenal Preparations in Gynecology and Spinal Anesthesia.**—The communications by Neu and Braun are in reply to the report of two fatalities mentioned in THE JOURNAL, July 31, page 423. Both insist that the suprarenal preparations should be used very much diluted as this reduces materially the toxic action even of the same dose. Neu further urges cautious estimation of the individual reaction in the given case and especially the exact state of the heart and vessels. He warns decidedly against intravenous injection, and emphasizes the necessity for extreme care in injecting the preparation where it might get into a vein. Braun insists that the vaginal portion of the uterus can be rendered anemic effectually and safely by injection of only 10 c.c. of 200 c.c. of salt solution containing merely 1 c.c. of the 1 per thousand solution of suprarenin—there is no need to use a stronger concentration.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 11, XXX, No. 82, pp. 857-872

141 Colloidal Metals in Treatment of Nephritis. G. Bassoni and G. Abbo.

July 15, No. 84, pp. 881-888

142 Intestinal Fauna of the Snail in Human Pathogenesis. (Dei protozoi intestinali della lumaca e una nuova petalomonas.) P. Barabaschi.

Policlinico, Rome

July, XVI, Surgical Section, No. 7, pp. 285-332

143 Single Incision for Gasserectomy, Resection of the Trigeminal Nerve and Ligation of the Middle Meningeal Artery. (Taglio unico per la resezione del ganglio di Gasser, della 2 e 3 branca del trigemino e per l'allacciatura del tronco della meningea media.) F. Mastrosimone.

Riforma Medica, Naples

July 26, XXV, No. 30, pp. 813-840

144 The Membrane of the Red Corpuscle. (Dimostrazione della membrana del corpusculo rosso.) G. Fusco.
145 Some Poisonous Plants from the Congo. (Sopra uno strychnos e sopra un veleno [Cipna apua] del Congo belga.) G. Vinci.

Nordiskt Medicinskt Arkiv, Stockholm

XLI, Internal Medicine, No. 4. Last indexed April 17, p. 1303

146 *Acquired Heart Disease in Children. (Die erworbenen Herzerkrankungen des Kindesalters.) G. Forssner. Commenced in No. 3.
147 A Study of Uric Acid. J. P. Chrom. Commenced in No. 2.

146. **Acquired Heart Disease in Children.**—Forssner reports the ultimate outcome in 96 cases of heart disease, articular rheumatism and chorea in children, investigated from fifteen to twenty-two years later, out of a total of 116 cases. All this material is classified and tabulated under various headings, the long course of observation permitting several important conclusions. Acute pericarditis seems to develop very rarely in acute articular rheumatism if it does not make its appearance in the first few months. In 10 out of 11 cases of acute pericarditis at the beginning of the rheumatic affection, the heart was previously sound. In the 16 cases of acute pericarditis 2 of the patients died during the first attack and 9 after a subacute or chronic course, up to fifteen years in one instance. One patient recovered completely and the heart has been apparently sound for twenty-nine years since. In another group of 25 cases of a mild heart affection not one of the patients re-examined lately had completely normal heart. The trouble had been slight mitral insufficiency, free from pleural or lung complications which were frequent in the first group. In the 56 cases of articular rheumatism in children, no less than 31 have died of some heart affection, and 4 still present some severe cardiac defect; in 4 others a similar defect has developed since; in 5 a mild cardiac defect is manifest and in 5 others it is probable. In only 5 is the heart apparently normal at present. The prognosis of articular rheumatism in this respect seems to depend on whether a heart affection develops within the first few months or not. If complications on the part of the heart develop later they seem to be of a milder form. Only 4 of the 24 patients with chorea minor have succumbed to heart disease and only 2 present a serious cardiac defect, 6 a mild one and in 7 the heart findings are apparently normal, while 2 have died of tuberculosis. In the 9 cases in which the children have had both chorea and acute articular rheumatism, 4 died of some heart affection, 2 have still a serious and 1 a slight cardiac defect, and one patient is apparently sound while another with objective findings is yet subjectively well.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

HISTORY OF NEW JERSEY STATE DENTAL SOCIETY. By Dr. A. Irwin, Camden, N. J., 1909. Paper.

JUBILÄUMS-JAHRBUCH DES "STEFANIE" ARMENKINDERSPITAL-VEREINES, BUDAPEST, FÜR 1908. Paper. Pp. 73.

THE TWENTY-EIGHTH ANNUAL REPORT OF THE NEWTON HOSPITAL CORPORATION, NEWTON, MASS., Feb. 1, 1909. Paper. Pp. 17.

TWENTIETH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF MEDICAL EXAMINERS OF TENNESSEE, 1909. By C. A. Abernathy, M.D., Secretary. Paper. Pp. 24.

A THEORY REGARDING THE ORIGIN OF CANCER. By C. E. Green. Cloth. Pp. 46, with illustrations. Second Edition. Price, 2 shillings net. London: William Green & Sons, 1909.

A CONSIDERATION OF THE INTRODUCTION OF SURGICAL ANESTHESIA. By William H. Welch, M.D., LL.D., Professor of Pathology, Johns Hopkins University, Baltimore. Paper. Pp. 24.

ASEPTIC SURGERY. By Charles Barrett Lockwood, F.R.C.S., Surgeon to St. Bartholomew's Hospital. Cloth. Pp. 275. Edition 3. Price, $1.50. New York: Oxford University Press, 1909.

CHILDREN IN HEALTH AND DISEASE. By David Forsyth, M.D., D.Sc., Physician to the Evelina Hospital for Sick Children. Cloth. Pp. 362. Price, $3. Philadelphia: P. Blakiston's Son, & Co., 1909.

HANDBUCH DER BIOCHEMIE DES MENSCHEN UND DER TIERE. Herausgegeben von Carl Oppenheimer in Berlin. Installment 19, with 7 illustrations. Price, 5 marks. Jena: Verlag von Gustav Fischer, 1909.

MÉMOIRE DE L'ASSOCIATION GÉNÉRALE DES MÉDECINS DE ROUMANIE RELATIF AU XVI CONGRÈS INTERNATIONAL DE MÉDECINE DE BUDAPEST. Bucarest: Ateliers graphiques Socec & Co., Société anonyme 1909.

ACCIDENT INSURANCE FOR WORKINGMEN. Reuben McKitrick. Comparative Legislation Bulletin No. 20, July, 1909. Prepared with the cooperation of the Political Science Department of the University of Wisconsin. Paper. Pp. 70.

WOMAN. A Treatise on the Normal and Pathologic Emotions of Feminine Love. By Bernard S. Talmey, M.D., Gynecologist to the Yorkville Hospital and Dispensary. Edition 5. Cloth. Pp. 260, with 23 drawings in text. Price, $3. New York: Practitioners' Publishing Co.

HINTS IN PRACTICAL URINALYSIS WITH ETIOLOGY AND SYMPTOMS OF SOME IMPORTANT GENITOURINARY DISEASES. Third Edition. By Charles C. Yarbrough, M.D., Therapist, Scientific Department, Frederick Stearns & Co. Paper. Pp. 77. Detroit, Mich.: Press of Frederick Stearns & Co.

A SYSTEM OF OPERATIVE SURGERY. By Various Authors. Edited by F. F. Burghard, M.S., F.R.C.S., Teacher of Operative Surgery in King's College, London. In Four Volumes. Vol. IV. Cloth. Pp. 686, with illustrations. Price, per set, $40; per vol., $10. New York: Oxford University Press, 1909.

MANUAL OF THE DISEASES OF THE EYE. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York. 1890-1903. Sixth Edition. Cloth. Pp. 391, with 362 illustrations. Price, $2 net. New York: Wm. Wood & Co., 1909.

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE AND TOXICOLOGY. By R. A. Witthaus, A.M., M.D., Professor of Chemistry, Medical Jurisprudence, and Toxicology in Cornell University and Tracy C. Becker, A.B., LL.B., Counsellor at Law, Professor of Criminal Law and Medical Jurisprudence in University of Buffalo, with the collaboration of various authors. Second Edition. Cloth. Vol. III. Pp. 982, with illustrations. Price, $6 per vol. Sold by Subscription only. New York: William Wood & Co., 1909.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOLUME LIII CHICAGO, ILLINOIS, SEPTEMBER 4, 1909 NUMBER 10

Original Articles

PRESERVATIVES IN FOOD MATERIALS

THEIR DETECTION AND EFFECT *

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The use of preservatives in food materials has engaged the attention of sanitarians for a number of years and they have uniformly condemned the practice. Nevertheless new and hitherto unsuspected uses of preservatives are discovered from time to time notwithstanding the laws prohibiting their use.

The plea of the manufacturers is that the use of preservatives is absolutely necessary to keep the food materials, and also that it is not harmful.

During the past ten years nearly all of the states of the union have enacted laws which aim to prohibit the use of food preservatives. The national law of 1906 has served as a model for many of the state laws enacted since that time.

The Food and Drugs Act, passed by Congress and approved June 30, 1906, provides "for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes."

Section 7 of the act states that a food shall be deemed to be adulterated:

First: If any substance has been mixed and packed with it so as to reduce or lower or injuriously affect its quality or strength.

Second: If any substance has been substituted wholly or in part for the article.

Third: If any valuable constituent of the article has been wholly or in part abstracted.

Fourth: If it is mixed, colored, powdered, coated, or stained in a manner whereby damage or inferiority is concealed.

Fifth: If it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health: *Provided*, That when in the preparation of food products for shipment they are preserved by an external application applied in such a manner that the preservative is necessarily removed mechanically, or by maceration in water, or otherwise, and directions for the removal of said preservative shall be printed on the covering or the package, the provisions of this act shall be construed as applying only when said products are ready for consumption.

Sixth: If it consists in whole or in part of a filthy, decomposed, or putrid animal or vegetable substance, or any portion of an animal unfit for food, whether manufactured or not, or if it is the product of a diseased animal, or one that has died otherwise than by slaughter.

Regulation 12 explains the terms "coloring," "powdering," "coating," and "staining" as used in Section 7:

(a) Only harmless colors may be used in food products.

(b) The reduction of a substance to a powder to conceal inferiority in character is prohibited.

(c) The term "powdered" means the application of any powdered substance to the exterior portion of articles of food, or the reduction of a substance to a powder.

(d) The term "coated" means the application of any substance to the exterior portion of a food product.

(e) The term "stain" includes any change produced by the addition of any substance to the exterior portion of foods which in any way alters their natural tint.

Regulation 14 relates to the external application of preservatives:

(a) Poisonous or deleterious preservatives shall only be applied externally, and they and the food products shall be of a character which shall not permit the permeation of any of the preservative to the interior, or any portion of the interior, of the product.

(b) When these products are ready for consumption, if any portion of the added preservative shall have penetrated the food product, then the proviso of Section 7, paragraph 5, under "Foods," shall not obtain, and such food products shall then be subject to the regulations for food products in general.

(c) The preservatives applied must be of such a character that, until removed, the food products are inedible.

Regulation 15 relates to the wholesomeness of colors and preservatives:

(a) Respecting the wholesomeness of colors, preservatives, and other substances which are added to foods, the Secretary of Agriculture shall determine from chemical or other examination, under the authority of the agricultural appropriation act (Public 382, approved June 30, 1906), the names of those substances permitted or inhibited in food products; and such findings, when approved by the Secretary of the Treasury and the Secretary of Commerce and Labor, shall become a part of these regulations.

(b) The Secretary of Agriculture shall determine from time to time, in accordance with the authority conferred by the agricultural appropriation act (Public 382, approved June 30, 1906), the principles which shall guide the use of colors, preservatives, and other substances added to foods; and when concurred in by the Secretary of the Treasury and the Secretary of Commerce and Labor, the principles so established shall become a part of these regulations.

Food Inspection Decision 100, approved by Secretary Wilson Dec. 9, 1908, states:

In view of the extent of the bleaching process (flour bleached with nitrogen peroxid) and of the immense quantity of bleached flour now on hand or in process of manufacture, no prosecutions will be recommended by this Department for the manufacture and sale thereof in the District of Columbia or the territories or for transportation or sale in interstate or foreign commerce, for a period of six months from the date thereof.

Food Inspection Decision 101, approved by Secretary Wilson Dec. 18, 1908, states:

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

> Benzoate of soda, in quantities not exceeding one-tenth of 1 per cent., may be added to those foods in which generally heretofore it has been used. The addition of benzoate of soda shall be plainly stated on the label of each package of such food.

Food Inspection Decision 102, dated Dec. 23, 1908, states:

> Until further notice, vegetables greened with copper and which are otherwise suitable for food, will be allowed entry into the United States, if the label bears the statement that sulphate of copper or other copper salts have been used to color the vegetables.

The "pure food" laws of the following states conform in all important particulars to the national laws: Vermont, 1908; Massachusetts, 1908; Connecticut, 1907; New Jersey, 1908; Pennsylvania, 1909; Delaware, 1907; Virginia, 1908; West Virginia, 1907; North Carolina, 1907; Georgia, 1906; Kentucky, 1908; Tennessee, 1907; Illinois, 1907; Arkansas, Colorado, 1907; Texas, 1909; Oklahoma, 1909.

Food Inspection Decision 101 permits the use of one-tenth of one per cent. of sodium benzoate in "those foods in which generally heretofore it has been used." This provision is apparently so drawn as to make it permissible to use sodium benzoate in almost any food substance. Some of the states which permit the use of sodium benzoate restrict its use to certain substances, as catsup, etc., while others have even less definite restrictions than those of the United States law.

Aside from the food regulations of the United States, the laws of the following states permit the use of sodium benzoate in food: Maine, New Hampshire, Pennsylvania, North Carolina, Georgia, Iowa, Texas, North Dakota, South Dakota, Wyoming, Oregon, and Washington. In the laws of the other states sodium benzoate is not expressly mentioned, but the laws of most of the states appear to prohibit its use.

The use of benzoate of soda, permitted by Decision 101, is, to my view, an unmitigated evil since we have the assurance of many manufacturers that such use is absolutely unnecessary to preserve the food materials in which it is used.

Dr. H. W. Wiley, chief of the Bureau of Chemistry, United States Department of Agriculture, in Circular 39 of that department, gives the results of experiments and the general conclusions drawn from them as to the injurious effects of sodium benzoate, as follows:

> From a careful study of the data in the individual cases and of the summaries of the results, it is evident that the administration of benzoic acid, either as such or in the form of benzoate of soda, is highly objectionable and produces a very serious disturbance of the metabolic functions, attended with injury to digestion and health.
>
> As in the case of boric acid, salicylic acid, and sulphurous acid, this injury manifests itself in a number of different ways, both in the production of unfavorable symptoms and in the disturbance of metabolism. These injurious effects are evident in the medical and clinical data, which show great disturbances of digestion, attended by phenomena which are clearly indicative of irritation, nausea, headache, and, in a few cases, vomiting. These symptoms were not only well marked, but they were produced on healthy individuals, receiving good and nourishing food and living under proper sanitary conditions. It is not only fair to conclude, therefore, that under similar conditions of administration of benzoic acid or benzoate of soda in the case of weaker systems, or less resistant conditions of health, much more serious and lasting injury would be produced.
>
> It was also noticed that the administration of benzoic acid and benzoate of soda was attended with a distinct loss of weight, indicative of either a disturbance of assimilation or an increased activity in those processes of the body which result in destruction of tissue. The production of a loss of weight in cases of this kind must be regarded as indicative of injurious effects.
>
> The influence of the benzoic acid and benzoate of soda on metabolism was never of a character indicative of a favorable change therein. While often the metabolic changes were not strongly marked, such changes as were established were of an injurious nature. It is evident that the administration of these bodies, therefore, in the food tends to derange metabolism in an injurious way.
>
> An important fact in connection with the administration of these bodies is found in the efforts which Nature makes to eliminate them from the system. In so far as possible the benzoic acid is converted into hippuric acid. There is a tendency usually manifested, however, to retain the benzoic acid in the body for a notable length of time, and this is much more marked in the case of benzoate of soda than in the case of benzoic acid.
>
> While the administration of both of these bodies, therefore, is undoubtedly harmful, the injurious effects are pronounced more rapidly in the case of benzoic acid than they are in the case of benzoate of soda; the data, however, will show that the total harmful effect produced in the end is practically the same in both cases; hence there appears to be no reason for supposing that the administration of the preservative in the form of benzoate of soda can be justified by an argument relating to the less injurious effect thereof on health.
>
> The occurrence of microscopic bodies in the urine is undoubtedly increased under the administration of benzoic acid in both forms, thus showing conclusively the tendency to stimulate the destructive activities of the body.
>
> Coming to final consideration of all of these different phases of the subject, there is only one conclusion to be drawn from the data which have been presented, and that is that in the interests of health both benzoic acid and benzoate of soda should be excluded from food products. This conclusion is reached independently of any consideration of the conditions which it is alleged surround the processes of manufacture and which result in the demands of the manufacturers to be allowed to continue the use of these substances. This is a subject which must be discussed from an entirely different point of view and has no bearing whatever on the general conclusions which have been reached, namely, that both benzoic acid and benzoate of soda are bodies which, when added to foods, are injurious to health.

In view of the fact that benzoic acid and sodium benzoate are allowed by the national and state laws, I hoped to perfect a speedy and simple method of discovering these substances in food substances.

ANTIFERMENTATIVE TEST FOR THE PRESENCE OF PRESERVATIVES IN FOOD MATERIALS

I have made a large series of tests to ascertain with what degree of certainty the presence of preservatives may be detected in food by means of the antifermentative action of the preservatives on trypsin. The studies of Bliss and Novy[1] show that of the ordinary digestive ferments trypsin is injured to the greatest extent by formaldehyd, aside from the effect of the preservative on the food constituents themselves. These results are confirmed by those of Sheperd,[2] who found that nitrous acid affected pancreatic digestion in higher dilution than it did the other ferments which he employed. For these reasons I regarded trypsin as a delicate indication of the presence of preservatives in food.

The tests for the detection of preservatives in food were carried out by the addition of small amounts of the food to a definite volume of a sterile solution of casein and determining the inhibiting influence of the preserved food on the tryptic digestion of the casein by the addition of a few drops of an alcoholic solution of acetic acid to the mixture at the end of a period of digestive action.

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[1] Bliss and Novy: Jour. Exper. Med., 1899, iv, 47.

[2] Sheperd: Report of Food and Dairy Commissioner, North Dakota, 1908.

The following experiments may be cited as indicative of the results obtained in a large series of tests:

TABLE OF RESULTS

Thirteen test-tubes containing 2 c.c. casein solution and 0.5 c.c. trypsin solution, to which increasing quantities of milk serum were added and decreasing quantities of 0.85 per cent sodium chlorid solution. These tubes were incubated at 37.0 degrees C. for three-quarters of an hour, when the alcoholic acetic acid was added drop by drop, about six drops of the acetic acid to each tube:

Milk Serum.	NaCl.	Sodium Benzoate.	Sodium Sulphite.	Results.
0.0 c.c.	1.0 c.c.	......	......	Nearly complete digestion
0.1 c.c.	0.9 c.c.	......	......	Nearly complete digestion
0.2 c.c.	0.8 c.c.	......	......	Nearly complete digestion
0.3 c.c.	0.7 c.c.	......	......	Nearly complete digestion
0.4 c.c.	0.6 c.c.	......	......	Slight precipitate formed
0.5 c.c.	0.5 c.c.	......	......	Slight precipitate formed
0.6 c.c.	0.4 c.c.	......	......	Definite precipitate formed
0.7 c.c.	0.3 c.c.	......	......	Definite precipitate formed
0.8 c.c.	0.2 c.c.	......	......	Definite precipitate formed
0.9 c.c.	0.1 c.c.	......	......	Definite precipitate formed
1.0 c.c.	0.0 c.c.	......	......	Marked precipitate formed
0.0 c.c.	0.5 c.c.	0.5 c.c.	......	Definite precipitate formed
0.0 c.c.	0.5 c.c.	......	0.5 c.c.	Slight precipitate formed

Increasing quantities of milk serum exerted an ascending effect in inhibiting the tryptic digestion of the casein, indicating that some preservative had been added to the milk. The addition of 0.5 c.c. sodium benzoate solution (concentrated) produced a slightly greater inhibition of the tryptic digestion than did an equal quantity of the milk serum, while 0.5 c.c. sodium sulphite solution (concentrated) produced approximately a degree of inhibition of the tryptic digestion equal to that produced by an equal quantity of the milk serum.

I have also attempted to ascertain the reliability of the antifermentative test in the detection of preservatives in meat. The hacked meat is placed in a meat-press and the blood and juices expressed. The main difficulty in applying the test to the meat juices lies in the fact that normal blood serum exerts an antifermentative effect. I have attempted to overcome this influence by heating the meat juice and recovering the watery part of the juice for the tests. The tests with this final product have not been satisfactory because, apparently, the major portion of the preservatives is retained in the coagulated albumin of the blood serum, and in consequence the tests made on the watery part of the meat juice were never very decisive.

The evidence which scientific investigators have collected all shows that the addition of chemical preservatives to food substances is injurious to the consumer in several different ways:

1. The use of preservatives permits the use of food substances that are of inferior grade or that are not perfectly fresh.
2. The food preservatives when taken into the body must be eliminated subsequently; this operation entails extra labor on some special organ or organs, and this extra labor will sooner or later lead to direct injury.
3. Many of the food preservatives are direct poisons and their constant ingestion induces chronic poisoning with its concomitant effects.
4. The food preservatives have an antifermentative effect on the different digestive ferments, especially on trypsin, and thus retard digestion and interfere with assimilation.
5. The food preservatives act on the food substances in such a manner as to render them less easily digested or even wholly indigestible, and make it necessary for the body to deal with partly digested food or deprive it altogether of nutrition, especially of nitrogenous food.
6. In consequence of the use of food preservatives digestion and assimilation are interfered with, and the general nutrition of the body suffers through organs that are overtaxed and injured in attempting to eliminate the poisonous chemical substances, and in attempting to deal with imperfectly split food substances that may be in such a state as to preclude their utilization, especially on account of the lack of digestive ferments, because of the loss entailed through the destructive action of the food preservatives.

SUMMARY

Contrary to my expectations the use of the antifermentative test for the detection of preservatives in foods does not give results that are satisfactory in every particular. The employment of this test must be carried out in such a manner as to eliminate normal antifermentative effects in the food substances, and attempts to remove these normal antiferments may lead to the simultaneous removal of the preservative.

In view of our knowledge of the detrimental effects of chemical food preservatives there is no more reprehensible practice than that of permitting their use in foods in any quantity whatever. The better class of manufacturers and dealers have set us an example, which we should follow, in the fight which they are making against the enactment of laws that in any particular permit the use of chemical substances for the preservation of foods where their use is not absolutely necessary.

We should not allow the greed of unscrupulous manufacturers and dealers to overrule our knowledge of the evil effects of the use of food preservatives. The medical profession owes it to itself to uphold the laudable position assumed by Dr. Wiley in his crusade against food adulteration, and any course which falls short of this will stultify the profession in the eyes of educated humanity of to-day and for all time to come.

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THE PARASITOLOGY OF SYPHILIS [*]

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Syphilis has long been considered an infectious disease, but until recent years the discovery of the causal agent has eluded the most careful investigation. There has hardly been a pathologist or syphilographer of note who has not attempted to unravel the mystery. It would be impossible here to enumerate all the alleged causes that have been reported. Lassar has said that during the past twenty-five years at least 125 causes have been assigned to syphilis. It is evident that the great majority of these theories were very short-lived. There are three, however, that deserve mention. The bacillus which Lustgarten described in 1885 occupied the stage for several years, being defended by so good an observer as Weigert, but later it was shown to be identical with the smegma bacillus. The next appearance was Neissen's so-called syphilis bacillus. Recently Neissen[1] has published the results of his fifteen years' work in the form of an extensive atlas profusely illustrating the remarkable transformation of his organism from the vegetable to the animal kingdom and back again. It is remarkable with what persistence Neissen has pursued his phantom. His is a case of "love's labor lost," for his results have never been confirmed.

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[*] Read in the Section on Dermatology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Neissen: Der Syphilis Bacillus, Leipzig, 1908.

Somewhat on the same order has been the work of Siegel,[2] who, in 1905, described his *Cytorrhyctes luis* along with cultural and inoculation experiments. Siegel's work attracted a great deal of attention, and, while the majority of observers failed to confirm Siegel's findings, a few, notably Merk,[3] Freund[4] and Jancke,[5] did confirm them. As a court of last resort, Schaudinn was selected to pass judgment on the cytorrhyctes, which he did very shortly, failing to confirm Siegel's work and announcing his own discovery of the *Spirochæta pallida.*

At the present time there is probably no one who believes in the cytorrhyctes, except Siegel and his pupils, and they were until recently busily engaged in explaining the cytorrhyctes as one of the developmental stages of the *Spirochæta pallida.*

Schaudinn and Hoffman[6] announced their discovery in May, 1905; and it is remarkable with what unanimity confirmatory observations were reported from all quarters. The bibliography on the subject is already enormous.

The organism, as described by Schaudinn, is an extremely slender thread, closely wound in the form of a spiral similar to a corkscrew. In length it varies from 7 to 21 microns. The ends are pointed and provided with flagellæ. It stains with most of the anilin dyes, but only very faintly; the best staining method is probably that of Giemsa, which stains the organisms a pale red. In tissues the best method of staining is that of Levaditi.

There have been many attempts made to grow the spirochete on artificial media, but they have been uniformly successful. Recently Schereschewsky[7] has reported successful results. Levaditi and others have reported a seeming increase in the number of organisms when grown in collodion sacs in the peritoneal cavity of rabbits. They have also been obtained in pure culture after inoculation into the anterior chamber of the eye of rabbits and other animals.

This brings up the question of inoculation experiments. Metchnikoff and Roux,[8] in 1903, demonstrated the susceptibility of the anthropoid apes to syphilis. Haensell,[9] in 1881, and Klebs,[10] Siegel[11] and Schultz[12] had all reported successful inoculation experiments, but on account of the absence of secondary manifestations or subinoculations their results are doubtful.

At the present time, however, there are numerous observations showing the pathogenicity of the spirochete. Finger and Landsteiner inoculated monkeys with spirochetal material and transmitted the infection from animal to animal through forty-five different monkeys. Metchnikoff and Roux, Neisser,[13] Hoffman and Brüning,[14] Mühlens[15] and many others have made successful inoculations and recovered the spirochete.

Bertarelli[16] was the first to demonstrate the susceptibility of rabbits. His results have been confirmed by Scherber,[17] Greef and Clausen,[18] Kraus and Volk[19] and many others. Bertarelli and Tomasezewski[20] carried the spirochete from rabbit to rabbit, and later to monkeys and guinea-pigs.

Hoffman[21] and Brüning have obtained positive results in dogs. It seems probable that most of the lower animals are susceptible to inoculation with the spirochete; only the higher monkeys, however, show evidence of secondary syphilis, the lower animals reacting only by the production of a local lesion at the site of the inoculation. Neisser[22] has shown, by experiments on several hundreds of monkeys, that, in spite of the fact that the lower monkeys do not develop evidence of general syphilis, the virus is distributed throughout the body.

In the face of so much confirmatory evidence it would seem useless for any one to deny the specificity of the spirochete; and yet there have been many who have done so.

It is manifestly impossible for the spirochete to pass through a Pasteur filter; yet Jancke,[23] a pupil of Siegel's, reports a successful inoculation with syphilitic material which had been passed through a Berkefeld-Chamberlain filter. This is in direct contradiction to the results obtained by Klingmüller and Baermann,[24] Metchnikoff[25] and Siebert.[26] Since Jancke did not find any spirochetes, nor did he make any subsequent inoculation experiments, it is possible that from the syphilitic toxins injected he obtained a local syphilid, analogous to the toxic tuberculids obtained by Zieler,[27] von Pirquet and others.

Another short-lived objection to the spirochete theory was the question of the identity of the so-called silver spirochetes obtained by the Levaditi[28] method of staining. They were held to be nerve fibrillæ, cell borders, fibrin, etc. The introduction of the dark-ground illuminator effectively put an end to this controversy.

Neisser ably sums up the question of the specificity of the spirochete as follows:

> As long as we are not in a position to obtain the spirochete in pure culture, and with such a culture produce syphilis in the lower animals, the proof of the specificity of the *Spirochæta pallida* depends essentially on the demonstration of its constant presence in all syphilitic lesions and its constant absence in non-syphilitic lesions.

What are the facts in the case?

It may be said that the spirochete can be demonstrated in all chancres, and in their regional adenitis, and in all condylomata and mucous patches. Noeggerath and Staehelin[29] found them in the circulating blood. Rolshoven[30] found them in the blood in thirty out of forty cases; in one case, three weeks before the eruption. Hoffman[31] produced a successful inoculation of a monkey with blood from a man whose syphilis was of six months' duration and who had a profuse secondary syphilis. Bandi and Simonelli[32] obtained the organisms in the blood from a patch of secondary erythema. Veillon and Girard[33] found them in the capillaries of an erythematous patch. Jacquet and Sevin[34] found them in all secondary lesions. They have been found innumerable times in papular syphilids. Spitzer[35] found the organisms in a case of ulcerating syphilid of eight years' duration, also in a gumma of the scalp. Doutrelepont and Grouven[36] and Tomaszewski,[37] Schaudinn,[38] Hoffman, Neisser and many others have found the spirochete in gummata. They have been found by numerous observers in the placenta and umbilical cord. They are found in the great majority of cases of congenital syphilis and in all organs and tissues of that condition. Meyer[39] examined eighteen macerated non-syphilitic fetuses and failed to find any spirochetes.

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[2] Siegel: München med. Wchnschr., 1905, lii, 1321.
[3] Merk: Wien. klin. Wchnschr., 1905, xviii, No. 36, p. 926.
[4] Freund: München med. Wchnschr., 1905, lii, No. 38, p. 1819.
[5] Jancke: München med. Wchnschr., 1905, lii, No. 45, p. 2183.
[6] Schaudinn and Hoffman: Arb. a. d. k. Gsndhtsamte, 1905, xxii, No. 2, p. 527.
[7] Schereschewsky: Deutsch. med. Wchnschr., 1909, xxxv, No. 19, p. 835.
[8] Metchnikoff and Roux: Etudes expérimentales sur la syphilis, Ann. de l'Inst. Pasteur, xvii, No. 12.
[9] Haensell: Arch. f. Ophth, (Graefe's), xxvii, p. 93.
[10] Klebs: Arch. f. exper. Path., 1879, v, 161.
[11] Siegel: München med. Wchnschr., 1905, lii, 1321.
[12] Schultz: Med. Klin., 1905, i, No. 19, p. 466.
[13] Neisser: Deutsch. med. Wchnschr., 1905, xxi, No. 19, p. 748.
[14] Hoffman and Brüning: Berl. klin. Wchnschr., 1905, xlii, No. 46, p. 1450.
[15] Mühlen's: Deutsch. med. Wchnschr., 1907, xxxiii, No. 30, p. 1207.
[16] Bertarelli: Centralbl. f. Bact., xl, 64.
[17] Scherber: Wien. klin. Wchnschr., 1906, xix, No. 24, p. 726.
[18] Greef and Clausen: Deutsch. med. Wchnschr., 1906, xxxii, No. 36, p. 1454.
[19] Kraus and Volk: Wiener. klin. Wchnschr., 1906, xix, No. 21, p. 620.
[20] Quoted by Grouven: Med. Klin., 1907, iii, No. 26, p. 774.
[21] Hoffman: Deutsch. med. Wchnschr., 1907, xxxiii, No. 14, p. 553.
[22] Neisser: Die experimentelle Syphilis-Forschung nach ihrem gegenwärtigem Stand, Berlin, 1906.
[23] Jancke: Med. Klin., 1907, iii, No. 17, p. 486.
[24] Klingmüller and Baermann: Deutsch. med. Wchnschr., 1904, xxx, No. 21, p. 766.
[25] Metchnikoff: Ann. de l'Inst. Pasteur, 1904, xviii.
[26] Siebert: Deutsch. med. Wchnschr., 1905, xxxi, No. 41, p. 1642.
[27] Zieler: München med. Wchnschr., 1908, lv, No. 39, p. 2046.
[28] Levaditi: Compt. rend. Soc. Biol., 1905, lvii, 652.

They have been found many times in various internal organs in acquired syphilis; notably in the heart and blood vessels, especially in cases of aortitis and endarteritis, in the liver in syphilitic hepatitis, and in the kidneys in syphilitic nephritis. In spite of the increasing evidence of the syphilitic etiology of tabes and paresis, I have never heard of the *Spirochæta pallida* being found in the central nervous system in acquired syphilis. Gaucher and Merle[40] found the organisms in the cerebrospinal fluid of a patient with cerebral syphilis. Neisser[41] in a case of secondary syphilis found the spirochete in the spinal fluid. It is remarkable, however, how few observations there are on this subject.

To sum up, it may be said that the *Spirochæta pallida* has been found innumerable times in all the lesions of every stage of syphilis. In fact, the presence of the organism is the cause of the lesions. In studying these lesions one is struck with the marked variation in the number of organisms present. As a general rule, it may be said that the more acute the lesion the greater the number. The organisms, as a rule, occupy the intercellular lymph spaces, although it is not uncommon to find them within a cell. They are more numerous in the center of the lesion, diminishing toward the periphery, but extending even into the non-inflammatory area. A remarkable circumstance noticed by all observers is the vast number of organisms in congenital syphilis and the slight evidence of inflammatory change.

The discovery of the *Spirochæta pallida* has resulted in an entirely new pathogenesis for the disease. It has been found in the experimental work that the most successful method of inoculation is by rubbing the virus into a scarified area of the skin; this in addition to the fact that the genital region of animals is the most susceptible part of the body may account for the sexual transmission of the disease and the relatively small percentage of extragenital infections.

Given an inoculation, the infection for a time is purely local; during the period of incubation the virus proliferates until the irritation becomes sufficient to cause the tissues to react by the production of a local inflammatory area, which tends to necrosis, but undoubtedly may resolve. From this local focus a dissemination of the infecting organisms takes place, the most usual route being by way of the lymph channels, although there is no doubt that at times the dissemination is hematogenous. Wolters[42] and others have demonstrated sections of chancres showing the spirochete in the blood vessels. This opens up an interesting and important point, as to the time at which this dissemination occurs. There is not much doubt but that this varies within wide limits. Neisser[43] in a large series of experiments attempted to solve this question by excising the inoculated area at varying intervals of time. His results were not conclusive. He found that in six cases excision at periods from ten minutes to twelve days prevented dissemination; on the other hand, in ten other cases excision was useless, even when done as soon as eight to fourteen hours after inoculation.

In whatever manner and at whatever time dissemination takes place, it is eventually by means of the blood stream that the spirochetes are distributed throughout the body. They do not remain in the circulating blood, but locate in the tissues. They show a predilection for certain tissues and organs, notably the skin, lymphatic tissues, the circulatory system, glandular organs, and, as Neisser has shown, the bone-marrow. Wherever they locate they may cause an inflammatory reaction, which is more or less characteristic, aside from the spirochetal content.

From the results obtained by the Wassermann[44] reaction, it is evident that pathologic changes are much more frequent in the internal organs than we have heretofore suspected.

As dermatologists, we are particularly interested in the cutaneous localization of the spirochete. We no longer recognize a toxic syphilid; all the cutaneous manifestations of the disease represent foci of spirochetal growth in which the spirochetes may persist for long periods, and from which a new local or general dissemination may occur. This remarkable quality which the spirochetes possess of lying dormant for long periods, their presence seemingly causing no pathologic changes, accounts for many of the characteristic late secondary eruptions, such as the annular, circinate and corymbose syphilids.

This tendency of the infection to become latent accounts in part for the marked chronicity of the disease. Füresz[45] examined lesions from twenty-four cases to determine the effect of mercurial treatment on the presence of the spirochetes. In spite of the fact that the cases had from ten to fifty-five inunctions, spirochetes were found in seventeen cases. They could be found as long as the least grade of infiltration was present. In fact, the organisms have been found at the site of a previous eruption.

The question of immunity has taken on new life since the discovery of the spirochete. It has always seemed rather illogical that a syphilitic should be immune to heterogenous virus and not immune to his own virus. The experiments of Finger and Landsteiner and Neisser show that, strictly speaking, there is no immunity. The apparent immunity, such as expressed by Colles' and Profeta's law, has been shown by the results of the Wassermann reaction to be due to a latent syphilitic infection. This is also true of 47 to 57 per cent. of syphilitics after the usual treatment.

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[29] Noeggerath and Staehelin: München. med. Wchnschr., 1905, lii, No. 31, p. 1481.

[30] Rolshoven: Med. Klin., 1907, iii, No. 33, p. 989.

[31] Hoffman: Berl. klin. Wchnschr., 1905, xlii, No. 46, p. 1450.

[32] Bandi and Simonelli: Centralbl. f. Bact. u. Parasitenk., xl, 64.

[33] Veillon and Girard: Compt. rend. Soc. biol., 1905, lvii, 652.

[34] Lesaurd: Ann. de dermat. et de syph., June, 1905.

[35] Spitzer: Wien. klin. Wchnschr., 1905, xviii, No. 31, p. 822.

[36] Doutrelepont and Grouven: Deutsch. med. Wchnschr., 1906, xxxii, No. 23, p. 908.

[37] Tomaszewski: München med. Wchnschr., 1906, liii, 1301.

[38] Levy-Bing: Le micröorganisme de la syphilis, Paris, 1907, p. 211.

[39] Meyer: Centralbl. f. Bact., 1. Abt., xlvi, No. 4

[40] Gaucher and Merle: Compt. rend. Acad. d. Sc., 1909, iii, 29.

[41] Neisser: Abstr. in Berl. klin. Wchnschr., 1909, xlvi, No. 20, p. 934.

[42] Atlas der aetiologischen und experimentellen Syphilis-Forschung, Berlin, 1908.

[43] Neisser: Die experimentelle Syphilis-Forschung, p. 80.

[44] Wassermann: Berl. klin. Wchnschr., 1907, xliv, No. 1, p. 12.

[45] Füresz: Med. Klin., 1907, iii, No. 35, p. 1045.

Admitting the etiologic rôle of the spirochete in syphilis, the question naturally arises: Of what value is the organism for diagnosis? Aside from the Wassermann reaction, the demonstration of the spirochete is the most reliable means at our disposal for the diagnosis of syphilis; as it is, these two factors give us practically absolute control of the diagnosis of syphilis in all its stages.

The greatest field for usefulness of the demonstration of the spirochete is in the diagnosis of primary syphilis; here it is far more reliable than the Wassermann reaction and much simpler. The spirochete can be demonstrated in every chancre and its contiguous enlarged lymphatic glands. I believe with Rona[46] that the finding of the spirochete permits a positive diagnosis to be made earlier than any other symptom. The Wassermann reaction in primary syphilis is not nearly so reliable and is infinitely more difficult of performance. The percentage of positive reactions increases in direct ratio to the duration of the infection; therefore the statistics of different observers vary greatly. When one considers the duration of the chancre, one finds that a positive Wassermann reaction is unusual before the third week, and that after that time the percentage of positive reactions increases up to the time of the general eruption, when it is practically 100.

Hoffman, Blumenthal and Roscher[47] all hold that in primary syphilis, diagnosis by means of the spirochete is simpler, quicker and more certain than the Wassermann reaction.

After the primary stage, the Wassermann reaction is so much more reliable that I have substituted it for the demonstration of the spirochete in doubtful cases.

The great drawback to the more widespread use of the demonstration of the spirochete for the diagnosis of primary syphilis has been the difficulty of staining the organism. Since the introduction of the Reichert dark-ground illuminator this is no longer a valid reason for the non-use of this most reliable means of diagnosis. By means of this instrument we are in a position to diagnose syphilis from the moment the initial lesion is first noticed. The method is so reliable, so simple and consumes so little time that there is no reason why it should not supplant all other methods of diagnosis.

As seen with the dark-ground illuminator the *Spirochæta pallida* is so characteristic that there is absolutely no difficulty in identifying it. The chief characteristics are as follows:

1. Size.—The spirochetes vary in length from 7 to 21 microns, being from one to three times the diameter of a red blood cell. It is not uncommon to see the organism longer than this, but I believe such forms to be composed of two or more individuals.

2. Shape.—They are seen to consist of an extremely slender thread closely wound in a corkscrew form, the windings being very acute. In fresh preparations the windings are absolutely regular, but as the specimen gets older the organism changes form, the most frequent change being an irregularity or obliteration of the windings in the central portion.

3. Position of Ends.—The ends of the pale spirochete are sharp and terminate on the periphery of the spiral and not in the center as in the other forms of spirochetes. This peculiarity is very characteristic, but is seen only when the organism rotates on its long axis.

4. Motility.—When the specimen is freshly prepared the organism is very active and possesses the following motions: (A) A rotation on its long axis in either direction; this motion is very rapid, but not necessarily accompanied by a change of position; as the specimen gets older this motion grows less. (B) It progresses from place to place, but not so rapidly as the other forms of spirochetes commonly met. (C) it has a quick and spasmodic bending or twisting motion. This form of movement increases as the specimen gets old, and at times one sees an organism bent in the form of a circle, resembling somewhat a crenated red blood corpuscle. It is not uncommon to find two organisms joined end to end. Again, one sees two or three organisms lying side by side.

The number of organisms found varies in the different lesions. They are most numerous in chancres, condylomata and mucous patches and vary from two or three in a field to sixty or eighty. Patients who have received some treatment show fewer organisms than the untreated ones. A few days' local treatment with calomel or other mercurial preparations causes a marked diminution in the number present in the chancre, although they are very numerous in the enlarged inguinal glands.

I have been using this method for two years and have never failed to find the organisms in chancres, mucous patches and condylomata. In our first communication,[48] Dr. Corbus and I reported finding the spirochete in mucous patches in three cases in which the syphilis was from one to three years old. Recently we found them in a mucous patch in which the infection was of eight and one-half years' duration. Neilsen[49] reports a case with a papulo-erosive syphilid of the mouth in which he demonstrated the spirochete nine years after the infection. Hoffman has reported a similar case and Papée[50] has reported one thirteen years after the initial lesion. These observations are important in view of the fact that some authorities are apt to belittle the contagiousness of syphilis after the fifth year.

Considering the simplicity and reliability of the dark-ground illuminator for the diagnosis of syphilitic lesions it is very strange that the method has not had a more universal application. We can explain this circumstance only by assuming that the profession has not a proper appreciation of the necessity for an early diagnosis. An early diagnosis permits us to institute a logical treatment; such a treatment should consist in the removal or destruction of the infected area at the earliest possible moment and the immediate institution of energetic mercurial medication.

In commenting on the results of excision in his experimental work, Neisser[51] says:

> These results are not very satisfying. In spite of them, however, I think now, as before, that excision should be done wherever possible. The value of excision is not affected by

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[46] Rona: Wien. med. Presse, 1907, No. 34.

[47] Hoffman, Blumenthal and Roscher: Med. Klin., 1909, v, No. 7, p. 241.

[48] Harris, Frederick G., and Corbus, B. C.: The Clinical Value of the Spirochæta pallida in the Diagnosis and Treatment of Syphilis, THE JOURNAL A. M. A., Dec. 5, 1908, li, 1928.

[49] Neilsen: Monatsh. f. pract. Dermat., xlviii, No. 2, p. 5.

[50] Papée: Monatsh. f. pract. Dermat., xlviii, No. 8, p. 347.

[51] Neisser: Die experimentelle Syphilis-Forschung, p. 81.

these experimental results, since under all circumstances it must be useful to get rid of such an important focus of poison, as the chancre.

Hoffman says:[52]

> Since the microscopic examination now allows us to diagnose the chancre early, we must try the effect of excision or destruction of the chancre at the earliest possible time, even if the experimental work does not permit us to expect to cure the disease. Still, the removal of such a large amount of virus, perhaps, may make the disease milder, especially when combined with energetic mercurial treatment.

The list of adherents of the method of excision and early treatment of syphilis is a growing one and includes such names as Neisser, Hoffman, Hallopeau, Volk, Scherber, Rona and Lukasiewicz. All authorities are agreed on the question of antispirochetal action of mercury, but the work with the Wassermann reaction has shown us that it is necessary that the treatment of syphilis should be more energetic and more individual than has been the custom. In fact, I believe that the control of the treatment, by means of the Wassermann test—the so-called biologic treatment—is a great advance in the therapeutics of syphilis.

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ABSTRACT OF DISCUSSION

Dr. G. A. DeSantos Saxe, New York City: Our knowledge of the *Spirochæta pallida* has progressed remarkably within the past two years, since Edward Spitzer, of Vienna, first showed the value of the dark-ground illuminator in recognizing this organism. There is still, however, a great deal to be learned, not only about the biologic character of the spirochete, but also about the practical aspects of the diagnosis of syphilis. Dr. Harris is very pessimistic on the subject of staining. The only method I know of that will give satisfaction in a fair proportion of cases is that of Schereschewsky, which was described in the *Centralblat für Bakteriologie*, October, 1907. This author was the first to recognize the difficulties of staining the *Spirochæta pallida*. They are twofold. First, the difficulty in spreading the smear in such a way that the erythrocytes will be sufficiently far apart to get the dye directly on the spirochetes. Second, the difficulty of avoiding precipitation in this delicate stain.

In order to obviate this, the following technic has been suggested by Schereschwesky: The clear serum from the sore, etc., obtained by means of a small curette, is spread on the slide and fixed with heat. The cubic centimeters of a 0.5 per cent. solution of pure glycerin and 13 drops of Giemsa's solution are heated in a test-tube, which must be absolutely clean. The slightest trace of acid in the tube causes a precipitate, and renders the stain useless. Contact of the slide with any grease or acid, or traces of dye cause a precipitate. The slides, therefore, should never come in contact with the fingers, but should be stained on clean glass supports. The heated stain is allowed to remain for ten minutes, and is then washed off. This method has been used in a large series of cases by White and Avery, and with it they found the spirochete in 100 per cent of chancres. I have found the method very satisfactory when all the precautions mentioned were used. I was able to find the spirochete in chancres in 100 per cent. of the untreated cases, and these results were verified by control experiments with the dark-ground illuminator. After treatment with mercury, however, the number of cases in which the spirochete was found was reduced to 50 and even 25 per cent., according to the extent of the treatment. The dark-ground illumination method takes less time and is more satisfactory than the staining method, but it is not always convenient to have the dark-ground condenser at hand.

This brings up the question: With what shall we dilute our drop of secretion in preparing it for the dark-ground illumination? I have obtained the best results by using either water or salt solution. This point may seem a trifling one, but if the results without water and with water be compared, it will be found that the spirochete is three times as distinct after using water. It swells up, becoming more refractive, brilliant and distinct. The refractive index of the serum is such that dark-ground illumination does not show the spirochete so distinctly in serum as in water. This dilution process has one disadvantage, namely, that the spirochete loses its motility more quickly, but the organism can be kept alive for a sufficient time to make a satisfactory examination. This observation has also been made by Commandon.

Sometimes, if the motions of the spirochetes are watched for some time, one can see two of them come together, join heads or tails, and wind round each other for a part of the way, and sometimes for the entire way. Sometimes one of the organisms seizes a bit of protein matter and floats about with this tiny ball, just as with a headlight. These peculiarities are, as yet, unaccounted for, and much research is needed in this field.

Dr. Howard Fox, New York: I should like an expression of opinion about the different apparatus used. For the past year I have tried both the Reichert and the Leitz dark-field illuminators. The instruments that are placed on the stage of the microscope such as the Reichert and Leitz (condenser B) are certainly much more convenient and cleanly than those inserted from beneath and that take the place of the Abbe condenser. I have used the Nernst lamp of from 50 to 60 candle power and it seems to me a perfectly satisfactory source of illumination. Does Dr. Harris for ordinary use consider the small arc light preferable to the Nernst lamp?

Dr. Maximilian Herzog, Chicago: Doctor Harris has not been the only or first one in Chicago who examined primary and secondary luetic lesions for spirochetes. I took up this work three years ago, on my return from the Philippine Islands, where I first became interested in it. I can confirm the observation of those who claim that the spirochetes are found in the great majority of cases in the primary and early secondary lesions. My first work was done before the dark-field condenser had been recommended and I had no great difficulty in finding the spirochetes in stained specimens, although it may take a great deal of time to find them in some instances, particularly in the late secondary lesions. Subsequently, I used the dark-field illuminator, but I generally found that if I could not detect the spirochetes after a prolonged search of stained specimens, I could not find them with the dark-field illuminator. I have frequently used a 50-candle power stereopticon incandescent lamp, in front of which I have a dark shield, and I employ the ordinary condenser, which is put on top of the stage. Dr. Saxe mentioned round, luminous bodies which he has found in connection with the spirochetes. These are probably due to optical effects and I would not attach much importance to the theory that the spirochete possibly feeds on these round bodies.

Dr. William S. Gottheil, New York City: I should be the last to deprecate these newer methods of diagnosis, and yet I think that we are perhaps attributing a little too much importance to them, to the exclusion of the older and established methods, very much as was the case with the surgeons and the Roentgen ray. I had occasion, a number of months ago, to see a physician with a lesion of the finger which looked very much like a chancre. I sent him, not to a tyro, but to an expert, who examined the secretion from the lesion, and the report came back, "no spirochetes." The doctor returned to me a week later and said: "I know that this is an initial lesion." A second bacteriologic examination was made, and again the report came back, "no spirochetes." One week after that he developed a pigmented papular syphilide. I mention this case only that it may serve as a note of warning against the neglect of the ordinary and customary and long-established and satisfactory methods of chancre diagnosis.

Dr. Douglass W. Montgomery, San Francisco: The assertion, I think, was made that amputation of the primary sore should be done to rid the patient of that much infection. I can not see very well how that would rid one of any considerable amount of infection. The primary sore is usually very small, no larger than a papular syphilide, and if the assertion made by Dr. Harris would hold good, it might be considered proper to excise every papule of a papular syphilide in order to get rid of so much more infection. That would be an equally logical proposition, and as a result, the patient would certainly be well tattooed. I would ask: What grounds are there for amputating the chancre with the idea of ridding the patient of that amount of infection?

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[52] Hoffman: Deutsch. med. Wchnschr., 1905, xxxi, No. 4, p. 1712.

Dr. M.S. Heidingsfeld, Cincinnati: I concur with Dr. Gottheil that we are in danger of placing too much reliance on comparatively new tests. While the value of the laboratory tests can not be questioned, they must still be regarded in the light of aids to clinical diagnosis rather than as absolute methods. The reports that emanate from the laboratory and which receive widespread attention are apt to lead the profession into serious error. I have known the diagnosis of syphilis essayed purely on laboratory tests in cases of suspected initial lesions which at the time were clinically negative and failed to show any confirmation after months of careful observation. I do not believe that the laboratory tests in syphilis have yet reached the degree of perfected development that they overshadow the clinical features in importance. With reference to the syphilometer: I found the syphilitic regulation test of two drops to be entirely too small to convey any degree of accuracy. The manufacturers kindly supplied me with a half pound of the taurin solution and when I repeated the test, using one or two grams of clear serum in place of one or two drops, they became uniformly positive in character, irrespective of the syphilitic or non-syphilitic character of the case.

Dr. F. G. Harris, Chicago: In regard to the method of demonstrating the spirochete, to which several of the speakers referred, I worked for a long time with the staining method, with uniformly poor results. My organisms were indefinite in outline, and I was unable to identify them positively. We must have a live organism in order to make a positive diagnosis, an organism which is not deformed.

In my work, I employ the Reichert apparatus, which I prefer on account of its convenience. I use an arc light, although one may also use a Nernst lamp; with the new model of the Reichert apparatus the ordinary inverted Welsbach light may be employed.

To obtain the material, I simply irritate the chancre or mucous patch and collect the serum in a capillary tube, from which it is then blown on a clean cover glass, which is inverted on a clean slide. The specimen must be as thin as possible. If the preparation is too thick or the slide is too thick, the rays of light will not be focused at the proper point.

The characteristic movement of the spirochete in a fresh preparation is rotary, like that of an auger-bit, and that is one thing that we do not see in the stained specimen. The windings are absolutely regular in a fresh specimen, but later become somewhat irregular. In the stained specimen few of the organisms are characteristic, most of them have lost their regular windings, due to the traumatism of preparation.

As to Dr. Montgomery's question whether or not it would be proper to excise all the possible foci of infection in secondary syphilis, he misunderstood the purpose in view in amputating the original chancre. With the dark-field illumination method we are able to make the diagnosis from the very beginning of the chancre. I have found the spirochete in chancres one day old. In such cases, by amputating that focus and putting the patient on immediate treatment, we hope to abort the syphilis. Scherber, in the case referred to by Dr. Pernet, amputated the chancre and gave the patient two courses of inunctions and there were no further symptoms during the three years that he was kept under observation. By means of the dark-field illumination method we can make the diagnosis of syphilis very early, and the reasons for amputating the chancre are mainly for the purpose of preventing dissemination, just as the surgeon would remove the primary source of any other kind of infection. We remove the primary and chief focus of infection by excising the chancre, and depend on the mercury to destroy any spirochetes that are left behind. Why should we wait until the body is permeated with them?

Dr. Maximilian Herzog, Chicago: I do not think that there was any possible mistake about the character of the organism that I demonstrated in Chicago in the shape of photomicrographs. The smears had all been prepared from typical primary lesions, the cases in fact were followed up to the secondary stage. It would indeed have been strange if I should have had the misfortune to find only the *Spirochæta refringens* in typical primary lesions. Such a claim need hardly be discussed.

REGENERATION OF THE CORNEA *

MEYER WIENER, M.D.
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It has long been known that the epithelium of the cornea would regenerate itself after being destroyed intentionally or by accident.

Haller[1] as early as 1763, in his "Elementary Physiology of the Human Body," asserts that regeneration of the cornea takes place, and even the oldest ophthalmologists[2] assume that regeneration of corneal tissue occurs. In fact, Desmarres[3] states that, in experimenting on transplantation of the cornea, he has noted an increase in length of the corneal flap, and even a true regeneration. Mauchart,[4] Mead and Larry,[4] Wardrop,[4] Gulz[5], and Malgaigne[6] resected corneal scars, and found that healing took place with little or no scar. What is extremely interesting in the light of our present knowledge of the effect of an opium derivative, dionin, is the work of Muehlbauer[7] and Beger,[8] who resected the superficial layers of the cornea and succeeded in obtaining a clear cornea following the application of laudanum. Desmarres was unsuccessful in his attempt to verify these results, since the rabbits on which he operated contracted a severe purulent inflammation (infection?), resulting in heavy scars.

It is a matter of common observation that corneal wounds following cataract extractions heal so that it would be difficult to find the line of incision. Also numerous corneal opacities clear in time, where the question might easily arise as to whether there might not be a true regeneration of transparent corneal tissue in these cases.

The first systematic research for actual proof of corneal regeneration was made by F. C. Donders[4] in 1846, who suspected that it occurred, but did not think that there was sufficient proof to establish the fact. He accordingly conducted a series of experiments on twenty-two rabbit eyes, from which he resected a flap of cornea from one-third to two-thirds of its thickness, including generally about one-half of the area of the cornea or more. He examined six eyes microscopically and gives a tabulated report showing (1) the thickness of the cornea cut away, (2) the thickness of the uncut cornea, (3) the thickness of the operated part a definite period after operation, and (4) the thickness of the regenerated part in hundredths of millimeters.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] "Vulnerato ex succo effuso pellucida renascitur, ut coram video, et late deleta nova redit, omnino ut epidermis." Haller: Elementa physiologiæ corporis humani, Lausanne, 1763, 363.

[2] Mauchart, B. D.: De ungue oculi r
(defendet C. F. Bilger), Diss. Med., Tüb
Alb., Disputationes chir. selectæ, i, 394,
Donders, Note 6.

[3] Desmarres: Ann. d'ocul., 1843, x, 5.

[4] Donders, F. C.: Untersuchungen über die Regeneration der Hornhaut, Holländ. Beitr. zu d. Anat. u. Physiol. Wissensch., 1846-8, i, 387 to 400.

[5] Gulz: Oesterr. med. Wchnschr., 1842, No. 2.

[6] Ann. d'ocul., Fl. Cuniere, 1845, xiii, 211.

[7] Himley: Die Krankheiten und Missbildungen des menschlichen Auges und deren Heilung, 1843, ii, 56.

[8] Ueber die Verwundbarkeit des Auges und seiner Haute, nach Versuchen an Thieraugen, Ztschr. f. d. Ophth. (von Ammon's), iii, Nos. 2 and 4

He concludes that the epithelium on the injured part grows thicker than on the normal cornea; that the newly formed true corneal tissue never reaches the same thickness as that removed, but that the longer the time elapsed from the time of operation to the time of examination, the thicker it becomes; that when one-half to two-thirds of the thickness of the cornea is removed, neither inflammation nor any other abnormality occurs; and that epithelium covers the exposed surface within two days after the operation, with a gradual regeneration of cornea, slowly assuming its normal characteristics.

The only one following Donders, so far as I have been able to find, who conducted experiments on animals and made microscopic examinations of the regenerated cornea was Reich.[9] He operated on thirty-two rabbit eyes and made twenty-two microscopic examinations with results similar to those of Donders. The longest time between operation and examination was nine months. His conclusions are that the reaction and the remaining scar are so slight that the removal of thick corneal opacities by the knife are not contraindicated, but that almost always irregular astigmatism and marked light diffusion results.

Waldeyer[10] says that Sanftleven, pupil of Cohnheim, admits the possibility of regeneration of the corneal cells.

The few clinically reported cases of regeneration, all except one, followed destruction of the corneal tissues from purulent ophthalmia. Kaempf[11] reports a case of pyorrhea in a soldier in whom, after the swelling of the lids had sufficiently subsided to permit an examination of the eyeball, an apparent complete destruction of the cornea was revealed, the surface being covered with slough. Within three weeks there was a regeneration of clear cornea, except in the central part, where there was an anterior synechia in both eyes. Four months later an iridectomy performed above and outward in either eye gave useful vision.

N. D. Staicovici[12] reports a case of complete regeneration of the cornea after its destruction down to Descemet's membrane following suppurative conjunctivitis.

A case is reported from Darier's clinic[11] in a man 67 years of age who had been blind for ten years with complete destruction of the cornea with a central prolapse of the iris. The prolapsed iris underwent *an inflammation* from infection during which the entire cornea sloughed off, *leaving only Descemet's* membrane, a final regeneration of clear cornea taking place.

H. Armaignac[13] observed, in a patient suffering from a very severe acute purulent coryza, a complete destruction of the cornea with the exception of Descemet's membrane. There was an almost complete staphyloma of the cornea with a central perforation. When the patient went home there was a ring of redness surrounding the cornea two millimeters wide composed of small capillaries which had the appearance of a new growth. The patient was given a 1 per cent. solution of picric acid to instill into the eye. Armaignac was astounded when, a month later, the patient returned to him with a complete regeneration of clear cornea. True, it was traversed by very fine capillaries and sprinkled with small vague opaque spots. The anterior chamber was re-established without synechia. Unfortunately, oblique illumination revealed the pupil almost blocked by a membranous exudate. The patient could distinguish the movement of fingers at thirty centimeters. Atropin failed to break up the adhesions, but one month later vision had reached one-twentieth. The same author[14] reported a case of regeneration of the cornea after a complete destruction of the membrane following purulent ophthalmia in a woman 60 years of age.

Peter A. Callan[15] saw the cornea regenerate after its destruction from ulcus serpens. The patient, a boy 17 years of age, appeared at the New York Eye and Ear Infirmary, Oct. 6, 1903, twenty-four hours after having been struck in the eye by a rivet. There was a circular ulcer three mm. to four mm., involving all the layers, filled with a creamy white mass, umbilicated in the center. Despite cauterization and other treatment, the ulcer increased in size until on October 11 the entire cornea was involved and on October 12 the anterior chamber abolished. The next day the slough disappeared, leaving Descemet's membrane exposed. October 14 there was no more suppuration and the eye was bandaged. On October 16 cicatrization was observed over the intact Descemet's membrane. Dionin in increasing strength was given, when by March the upper half had cleared so that the pupil was visible. On June 13 vision with + 3.5 D. cyl. ax. 105 degrees was 8/70. The cornea was quite clear in the upper third, but lower two-thirds more or less hazy, resembling an eye after recovery from a severe attack of interstitial keratitis.

H. L. Wolfner[16] reported a case in which a woman 32 years of age came with gonorrheal ophthalmia of right eye. The left eye had been removed in childhood. The socket of the left eye was also infected with gonococci. When first seen there was ulceration of the right cornea, which progressed until the entire cornea down to Descemet's membrane was destroyed. Neither Wolfner nor Dr. A. Alt, who saw the case in consultation, believed that there was any hope of preserving vision. Within six weeks to two months the cornea was practically regenerated. There resulted a very thin but clear cornea, except from a faint cloud just below the center, with a slight tendency toward keratoconus and a small deposit on the anterior capsule; vision, 14/120.

In view of the partial success of the results already obtained along this line, and encouraged by the knowledge accumulated by modern studies on regeneration in general, as well as by the fact that our former investigators had no knowledge of aseptic surgery, late in July, 1908, I began a series of experiments on rabbits. From then to March 10 thirty-one rabbit eyes have been used for experimentation. Five rabbits died before notations were finished, and these have been excluded from the report. The rabbits were cocainized and wrapped in a long towel, with only their heads projecting, which served to keep them immovable. A thread was then passed through the conjunctiva and subconjunctival tissue so as to help fix the globe, which was held by the assistant who separated the lids. A flap of cornea was then dissected away varying from one-half to a little over two-thirds the thickness of the cornea, and including one-half, two-thirds, or even the entire area of the cornea, the extent of surface bared seeming to have little or no influence on the general healing process or regeneration. The only difference was that the smaller area was sooner covered by epithelium. Aside from taking general aseptic precautions at the time of the operation, no special means were taken for their after-care, the rabbits being placed in the cages without dressing or bandage. Only where occasionally there seemed to be a purulent or mucopurulent discharge after a day or two, a little powdered xeroform was dusted once daily over the cornea until the infection was controlled, which was usually within a few days. Also wherever there happened to be an unusual amount of secretion, purulent or otherwise, which might tend to agglutinate the lids, the lids were washed with warm water and the secretion removed. Following the operation the rabbits seemed to suffer no pain or inconvenience, the palpebral opening being held as wide open over the eye operated on as the sound eye, with no photophobia.

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[9] Reich, M.: Ueber die Regeneration der Hornhaut, Klin. Monatsbl. f. Augenh., 1873, xi, 197-211.

[10] In de Wecker and Landolt: *Traité complète d'ophthalmologie*, ii, 35.

[11] Regeneration des *grossten Theils der Hornhaute* nach Pyorrhoe, Oesterr. Ztschr. f. pract. Heilk., 1868, xiv, 77-80.

[12] Staicovici, N. D.: Doua cazuri de regenerere complecta a corneei in urma destructiunei complecta a *acestei* memb. membrane, prin. procese de supuratiune conjunctivala, Rev. de chir., Bucharest, 1903, vii, 20.

[13] Armaignac, H.: Regenerazione del tessuto cheratico, *Boll.* d'ocul., Firenze, 1897, xix, 161-164

[14] Armaignac, H.: Un cas de règénération complète *de la cornée* aprés un splacele total de cette membrane consécutif à une *conjunctivite purulente* chez *une femme* de 60 ans, *Bull. et mém.* Soc. Franc. d'opth., 1899, xvii, 287.

[15] Regeneration of cornea. Report *of case of ulcus serpens, Am.* Med., July 9, 1904.

[16] Regeneration of the Cornea; report of case at Ophthalmic Section of St. Louis Medical Society, June 10, 1908.

Where only half the cornea was removed, the posterior was selected as being more readily managed on account of escaping the incidental action of the membrana nictitans. The section was commenced by making a vertical incision from above downward through the median line from the upper corneal margin to the lower corneal margin, going as deep as judgment from experience would permit without puncturing Descemet's membrane. Then from the center of this line a similar cut was made horizontally backward to the posterior limbus. The triangular was then grasped with a fine conjunctival forceps, and with slight tension, and the knife held flat, the corneal tissue was easily peeled off. Sometimes where the flap looked thin a further attempt to resect another layer was made, but this usually ended disastrously by puncturing Descemet's membrane. When this occurred an ectasia corneæ, or even staphyloma of the cornea, almost invariably took place. Twenty-four hours after the operation there was usually some slight conjunctival injection. The resected surface had a stippled appearance as though covered with a thin layer of serum or lymph, but wiping the surface with a wet sponge did not seem to change its aspect. The cut edges had a slightly raised but rounded-off look. The transparency, however, was surprisingly little disturbed. This was also the case after forty-eight hours, when the raised edges had encroached several millimeters over the raw surface. There were at this time, however, no blood vessels over the cornea except that there was an increased vascularization at the limbus.

On the third day there is generally a small milky spot about the center of the resected area, but this usually disappears within a few days, when the cornea again shows a smooth surface, being completely covered by epithelium. The resected area now shows a general infiltration or haziness which is greatest at the line of incision, but at no time to such an extent that the pupil can not be seen throught it, unless infection supervenes. This haze gradually clears until about four to six weeks after the operation a casual examination would not determine an opacity, which can only be revealed in certain positions or by oblique illumination.

In those rabbits which have been kept several months the cornea is generally apparently perfectly clear by oblique illumination as well as by transillumination, with the exception of an occasionally small, slightly hazy area.

Microscopic serial sections have been made showing the fresh cornea immediately after resection; after twenty-four hours; after forty-eight hours; four days; seven days; two weeks; one month; two months, and so on up to seven months. The specimens show a gradual thickening of the cornea the longer the period from the time of operation. Experiments are also under way on other animals than rabbits. Since, however, enough time has not been had to complete the series, I have refrained from presenting at this time the results of microscopic examination, not wishing to draw too hasty or indefinite conclusions. This is consequently offered as a preliminary report.

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ABSTRACT OF DISCUSSION

Dr. John Green, Jr., St. Louis: Through the courtesy of Dr. Wiener I had an opportunity of examining the animals operated on by him. The line of incision was represented by a very delicate linear scar and the area corresponding to the exsected portion was faintly nebulous. The nebula was visible only by oblique illumination. The contour of the cornea in the exsected portion seemed to be about the same as in the unoperated part. In future experiments it would be well to observe the reflections of the cornea from Placedo's disc before operation and for some months afterward, to determine, if possible, how much distortion of the corneal surface had occurred, and whether regular or irregular astigmatism had developed. Two facts have been brought out which indicate that a true regeneration has taken place: First, the absence of any notable opacity shows that a very small amount, if any, of scar tissue has formed; second, the evenness of the corneal surface, there being no irregularities of the epithelium.

Dr. William Zentmayer, Philadelphia: Recently in a case of nodular keratitis I dissected out a nodule down to the membrane of Descemet and I can say that after a few weeks the corneal tissue apparently had been regenerated, as the resulting space was filled in almost to the level of the surrounding corneal level. I did not examine it with the loup, but with the naked eye it appeared transparent.

Dr. R. L. Randolph, Baltimore: I have been very much interested in these observations of Dr. Wiener, and have been long impressed with the reparative activity in the rabbit's eye particularly and in the eyes of the lower animals generally. Some years ago in some experimental work in the reproduction of the crystalline lens I succeeded in getting as many as three lenses from an eye in the course of a year. Whether this reproductivity finds any analogy in human beings is doubtful, but I cannot help thinking that what we call secondary cataract is perhaps an effort on the part of Nature to form a new lens. We know that the lens in the lower animals is formed by the reproduction of the cells on the anterior capsule by the growth of these cells into spindle cells and subsequently into lens fibers, and we have pretty much the same process in human beings. As regards the rabbit, I have been astonished at the quickness with which superficial abrasions of the cornea get well. A fine scratch across the cornea in the case of the rabbit will disappear absolutely in two or three hours, where it is perfectly possible in the human being still to reveal it late in the day with the aid of fluorescin. This is very surprising in view of the fact that the bacterial flora of the conjunctiva in the rabbit is practically identical with that of the human being; in other words, its cornea has much the same conditions to contend with as has the human. What this is due to I have never been able to say. It is suggested that the leucocytes in the rabbit's cornea are exceedingly active. I am a little skeptical as to the repair of so serious a wound in the human as Dr. Wiener has spoken of.

DR. A. R. BAKER, Cleveland: No doubt all of us have seen cases of ophthalmia neonatorum in which there is an anterior polar cataract and doubtless there must have been a perforation of the cornea; and yet we have seen those persons later in life when little or no opacity of the cornea existed. I have seen several cases with 20/20 vision after the lens has been removed, so that it seems probable there may be a regeneration of the cornea in young persons. I do not think that I have ever seen this occur in adults, although we have all seen cases in which the epithelium has been entirely restored. Only recently in the case of a burn from an explosion of chemicals the corneæ of both eyes were entirely opaque. The physician in attendance gave a verdict of total blindness, yet in a few hours the entire epithelium peeled off and in the course of a few weeks the patient recovered perfect vision. We have all seen these cases. I must confess, however, that I am pessimistic as to the permanent result of regeneration of the deeper portions of the cornea. Many years ago I made experiments on guinea-pigs similar to those of the essayist; results were favorable at first, but disappointing later. Transplantation of the cornea has been one of the dreams of the oculist for hundreds of years. The primary results are always flattering, but the ultimate ones are disappointing.

DR. R. F. MILLER, St. Louis: Through the courtesy of Dr. Wiener I had an opportunity to see the animals he operated on, and I would like to say that many of these cases showed very beautiful results. I also happened to be present when he operated on the human, and I must say that from all appearances the outlook is certainly beautiful, and, as the doctor reported, about three days afterward the condition seemed to be about the same as in the animals. So I think the doctor has opened up a subject again which has been tried many times, but perhaps with careful detailed work he will be able to accomplish a great deal more than was accomplished twenty-five years ago. The work was very interesting to me and I think with future trials will give very good results.

DR. M. WIENER, St. Louis: In regard to the corneal reflections in these photographs which I pass around, there is one rabbit which shows the regular reflection of the window in the eye, while the other eye shows an irregular reflection of the window. In one eye we got a clear cornea after resection and in the other we got a fairly clear cornea. The reason we got the clear cornea is that I believe the cornea was dissected out as it should be, that is, in layers. The piece should not be taken out irregularly in ridges, but evenly, and it can easily be done, almost peeled off in separate layers. I think this is essential in order to get a clear and regular surface. So far as having a regeneration, one microscopic specimen surely shows thickening of the cornea in the late specimens from that of the earlier ones; also, immediately after the operation, microscopically we can see a distinct depression, which later smooths out perfectly. Dr. Randolph believed it could not be done in cases in which there had been serious inflammation. These experiments were done on account of my having read of and seen a case of regeneration of the cornea after a gonorrheal ophthalmia, and that is certainly a severe process of inflammation. If the cornea can regenerate after a gonorrheal ophthalmia we ought to be able to take a clean scar and resect it. Dr. Baker thought it would be feasible, perhaps, only in the young. I have taken old animals as well as young, and the regeneration of the cornea mentioned in this paper was in an adult. I mentioned in the paper that after the operation these animals were put in the cages and nothing done with them at all. Their eyes were left open. If there was an unusual amount of secretion it was wiped off from day to day and possibly a little antiseptic powder used. Now I have started a series of experiments to determine whether there is any more rapid regeneration or clearing in eyes not treated as compared with eyes treated with dionin.

Knowledge of Drugs.—"Learn how to prescribe remedies and you will complain less of their inefficacy and their dangers."—Cappiovaccio of Cremona in the sixteenth century.

THE OPERATIVE TREATMENT OF GLAUCOMA BY CYCLODIALYSIS *

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The operation of cyclodialysis suggested by Heine in 1905, consists in making an artificial communication between the anterior chamber and the suprachorioidal space, allowing a new channel for the escape of the aqueous humor and thus reducing intraocular tension. The operation is performed under local anesthesia by making an incision in the sclera 6 to 8 mm. posterior to the sclerocorneal junction after reflecting a conjunctival flap and with a bent spatula, separating the ciliary body from the overlying sclera and breaking through the pectinate ligament. A quadrant of the iris periphery is then detached. I have performed this operation in eighteen cases specially selected to test its merits. These cases have now been observed for a sufficiently long time to permit an opinion on the value of this operation.

The cases can be arranged in the following groups:

A. CHRONIC GLAUCOMA

These are cases in which an iridectomy did not succeed in permanently reducing the tension, or a contraindication to an iridectomy was present.

CASE 1.—R. B. M. Age 55. L. Vision=20/20—. T. (Tension)+1. Fn. (Field normal) Nov. 14, 1905; Iridectomy. T. again increased after six weeks. June 2, 1906: Cyclodialysis. At operation some difficulty in breaking through pectinate ligament. Aug. 1, 1906: Tn. V.=20/30. Dec. 1, 1906: Some opacities in posterior cortex of lens. Tn. (Tension normal) March 22, 1909: T. has remained normal without any miotics; cataract nearly mature.

CASE 2.—E. M. R. Age 60. Aug. 1, 1905: Iridectomy. Notwithstanding drops, eye showed tendency to be hard. V. = 20/30. F. contracted nasally and below. May 21, 1906: Cyclodialysis. During operation anterior chamber filled with blood. This was evacuated by paracentesis two days later. V.=20/40. On the last visit, May 6, 1908, V.=20/30; F. no change. Tn. Has occasionally used miotics.

CASES 3 AND 4.—S. G. Age 45. R. absolute glaucoma. L. 20/100. T.+. F. contracted nasally to 10 degrees. March 20, 1906: R. cyclodialysis. April 1, 1906: No reaction. No chorioidal detachment appreciable. Tn. April 4, 1906: L. cyclodialysis. April 20, 1906: R. T.+; L. Tn. March 10, 1907: R. T.+. L. 20/70. F. no change. T+½. To use drops. April 3, 1908: L. tension kept slightly elevated, hence cyclodialysis repeated in left eye. F. nasally contracted to 5 degrees. Incision in sclera external to old one. On introducing spatula instrument passed into anterior chamber without encountering any resistance. June 17, 1908: L. Tn. 20/70. R. T.+. Dec. 30, 1908: L. Tn. Feb. 24, 1909: L. Tn. R. T.+.

CASE 5.—M. W. Age 56. Marked arteriosclerosis. R. widely dilated pupil. T.+. Od. cup with atrophy. V.=20/100. F. nasal contraction to 5 degrees. May 2, 1907: Cyclodialysis. Uneventful. June 17, 1908: R. 20/200. Tn. No miotics. March 2, 1909: Tn. V.=20/200. No drops.

CASE 6.—P. P. Age 61. R. iridectomy, 1905. May 1, 1907: R. V.=20/200. F. 15 degrees nasal. 30 degrees temp. T.+ Cyclodialysis. Uneventful, June 10, 1908: R. 20/200—; T.+?. F. Slightly more contracted. March 8, 1909: T.+.

CASE 7.—A. G. Age 42. R. 20/200. F. 80 degrees temp. 35 degrees sup. 35 degrees inf. 30 degrees nasal. T.+. Aug. 27, 1908: Cyclodialysis. During operation anterior chamber filled with blood. That evening attack acute glaucoma, re-

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

lieved by hot applications, eserin (physostigmin) and dionin. Nov. 28, 1908: T.+. Arc of iris detached showed atrophy of stroma. Feb. 24, 1909: T.+.

Cases 8 and 9.—J. S. (R. and L.) cup with atrophy. July 31, 1908: R. cyclodialysis. Aug. 7, 1908: L. cyclodialysis; both uneventful. Aug. 20, 1908: T.— in both. R. V.=m. h. (movements of hands) L. V.=20/70. F. 25 degrees nasal. 30 degrees sup. 10 degrees inf. 45 degrees, temp. September 9, 1908: Tn. each Oct. 12, 1908, last visit, Tn. each.

Case 10.—F. W. Age 40. L. od. cup with atrophy. V.= hand movements in temporal field. T.+ Sept. 29, 1908: Cyclodialysis. Some hemorrhage and posterior adhesions. Oct. 13, 1908: T.—. Small hemorrhage on disc. November 27, Tn. F. had enlarged. March 29, 1909: L. opac. vitr. T.—. V. no change. F. enlarged.

Case 11.—R. F. Age 50. L. iridectomy two years ago. Deep cup with atrophy. V.=20/100. F. contracted to small temporal area. T.+. June 27, 1908: Cyclodialysis. Uneventful. Feb. 20, 1909: V. 20/70. Tn. Field enlarged.

Case 12.—T. C. A. Age 60. Feb. 27, 1907: L. V.=10/200. F. contracted to temporal half. T.+. Nov. 27, 1907: Cyclodialysis. Uneventful. T. reduced. Optical iridectomy later for old opacity of cornea. April 4, 1908, last visit, 10/200. Tn.

Case 13.—A. S. Age 62. Chronic glaucoma with atrophy. L. 20/70—. T.+. Dec. 2, 1908: Cyclodialysis. Very difficult to enter anterior chamber. Jan. 26, 1909: Last visit. L. 20/100. Field enlarged out and down. Tn. (no miotics).

Cases 14 and 15.—M. L. Age 26. V. always poor, especially for last six months. R. 20/200. T.+. F. irregular contraction. L. m. h. T.+. F. contracted to temporal and superior quadrant. Very deep cup. Pronounced atrophy. Dec. 18, 1907: R. cyclodialysis. T. reduced and remained minus. Dec. 26, 1907: L. cyclodialysis. After 1 week, T. rose again. Jan. 6, 1908: Repeated operation. T.— since. Jan. 20, 1908: R. 20/200. L. 20/200. Fields enlarged. Aug. 28, 1908: R. T.+ again. L. T.+. R. cyclodialysis repeated. Favorable except that it was followed by retinal hemorrhage in macula. Sudden attack acute glaucoma requiring paracentesis. Jan. 7, 1909: R. cyclodialysis repeated. Down and out. T. very soft. Cornea slightly collapsed. V. eccentric 3/200. L. T.— V.= 20/200. F. enlarged.

B. CONGENITAL GLAUCOMA

Case 16.—J. G. Age 1 year. Parents first cousins. At six months diagnosis made. July 1, 1908: Deep cup. Prescribed pilocarpin. Eyes enlarged. Corneæ dull. Cyclodialysis in both. Sclera very thin. No resistance whatever at ligament. Aug. 1, 1908: R. again hard. L. Tn. Mother thought that child could now see. Dec. 30, 1908: Tn. each. Jan. 6, 1909: R. Tn. L. T+. Using pilocarpin 2 per cent.

C. EXTENSIVE CAPSULAR ADHESION TO CORNEA

Case 17.—A. C. Age 30. Dec. 2, 1907: Struck in eye with stick. Transverse wound of cornea. Irideremia. Broad adhesion of lens capsule to corneal scar. T. remained hard notwithstanding all medicinal treatment. Jan. 20, 1908: Cyclodialysis. On passing spatula an obstruction encountered more posterior than usual. A quadrant detached. T. not perceptibly reduced. On following day eye very hard. This continued; tension somewhat reduced by daily pilocarpin sweats. Jan. 26, 1908: T.+. June 3, 1909. Glaucoma absolute and degenerate eye.

D. GLAUCOMA SECONDARY TO NEURORETINITIS WITH VASCULAR CHANGES AND RETINAL HEMORRHAGES

Case 18.—S. Age 46. Acute glaucoma not controlled by miotics, sweats, and mercurial injections. Cyclodialysis. T. reduced for two days, then relapse. Patient lost sight of.

In brief the operation has failed in congenital glaucoma (Case 16), in glaucoma secondary to extensive capsular adhesion to the cornea (Case 17), and in glaucoma secondary to neuroretinitis with endarteritis and hemorrhages (Case 18). It has been partly successful in cases of chronic glaucoma (Cases 1 to 15) as will be seen in the following summary:

Case 1.—T. remained normal without miotics to present date, a period of two years, nine months.

Case 2.—T. remained normal with occasional use of miotics to date of last visit, two years.

Case 3.—T. remained normal for one year then became hard.

Case 4.—T. remained down for one year and a half, then operation repeated and T. has remained down to present date, eleven months.

Case 5.—T. has remained down to date, one year, ten months. No miotics.

Case 6.—T. remained down for one year, has now been somewhat raised for ten months, incompletely controlled by miotics.

Case 7.—T. reduced for four months. Has now been elevated for three months.

Cases 8 and 9.—T. down at last visit, two months, without drops.

Case 10.—T. down now for six months since operation.

Case 11.—T. down now for nine months.

Case 12.—T. down during five months' period of observation.

Case 13.—T. down at last visit, two months.

Case 14.—T. down for one year, eight months, with enlargement of field; operation repeated then (August, 1908), followed by hemorrhage in macular region, attacks of acute glaucoma; operation repeated in January, 1909. T.— since. V. very much reduced as field is eccentric.

Case 15.—T. down for one week. Operation repeated. T.— since; period of observation one year, three months. V. and F. improved.

These were all cases selected to test the value of cyclodialysis, in which an iridectomy had been performed with no permanent benefit or in which, on account of the advanced stage of the glaucoma, the atrophy of the optic nerve, the restricted field or the condition of the iris, not much result could be expected from an iridectomy. Of these the tension was reduced in eleven for observation-periods varying from two years and nine months to two months. In the remaining four the tension again became hard.

The operation is technically easy, much easier than a correct iridectomy. The difficulties encountered in breaking through the pectinate ligament differed and were readily recognized. In one in which at the second operation the same quadrant of iris was displaced, no resistance at all was felt as if a firm adhesion had not reformed. In one case this segment of iris subsequently developed distinct atrophy of the iris stroma. In one of the most favorable cases a cataract developed, the opacity beginning in the posterior cortex. It is impossible to say whether the cyclodialysis was responsible for this. The operation did not aggravate the condition except for a macular hemorrhage in one, and attacks of acute glaucoma in two. No vitreous disturbance or detachment of the chorioid were observed. The operation was repeated with benefit in three cases. In one (Case 14), the eye subsequently exhibited marked hypotony which apparently was not harmful but this again is a point requiring further observation. Why the operation succeeded in some, and in apparently similar cases the tension again rose, can not be explained.

It can be conservatively stated that cyclodialysis is of value in certain limited conditions; it is indicated in the advanced cases of chronic glaucoma, especially those in which iridectomy has not succeeded in reducing the tension. It can not in any way replace the classical operation of iridectomy or its recent modifications in incipient cases of chronic glaucoma.

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ABSTRACT OF DISCUSSION

DR. E. V. L. BROWN, Chicago: My experience with cyclodialysis extends over a period of but 16 months and has been confined to twelve operations on nine glaucomatous eyes, in which iridectomy could not be done or was inadvisable. A tabulation[*] of the data available at this time covers the following points: Name, address, age, type of glaucoma, cause of the glaucoma, duration of the preceding eye disease, probable duration of the increased tension, previous operations for glaucoma, reason why iridectomy was not done, date of cyclodialysis, eye operated on, site of scleral incision, extent of the separation of the root of the iris from the sclera, complications at the time of the operation, tension before operation, immediately after and three days after operation, as well as when the patient was last seen, any other cyclodialysis or iridectomy operation necessary, vision before and after operation, depth of the anterior chamber and dimensions of pupil, respectively before and after operation, subsequent elevation of tension, period of observation in which tension has remained normal, and a notation as to whether or not I consider the particular operation a success or a failure at this time.

The data may be summarized as follows: the operation was successful in five cases, 1, 2, 4, 5, 8 (55 per cent.) and was unsuccessful in four cases, 3, 6, 7, 9 (45 per cent.). In two of the successful cases (1 and 2) the patients required a second cyclodialysis to reduce the tension permanently, and a third eye (Case 3) had to be enucleated because increased tension and pain persisted after two cyclodialyses; in a fourth (Case 9) increased tension returned, and was permanently relieved first by iridectomy.

All the successful results were in secondary glaucoma cases; three were chronic glaucoma, two secondary to adherent leucoma (Cases 2 and 5), and one secondary to anterior iris root synechia (Case 1), and one was subacute and secondary to adherent leucoma (Case 8), and one was an acute case secondary to traumatic dislocation of the lens into the vitreous (Case 4). The increased tensions before operation were respectively +1, +1, +2, +1, +¾; average, +1. The probable duration of the preceding eye disease in these five cases was respectively, 9, 5¾, 2, 6, and ¾ months; average, 4¾ months. The probable duration of the increased tension was respectively about 1, 4, 4, 2½ and 1 week; average, 2 weeks. The subsequent period of freedom from glaucomatous tension has now been respectively over 13, 1½, 14, 11 and 12 months, or an average of ten months of normal tension.

The vision in the three chronic cases was and has remained *nil*; in the subacute case it improved from the counting of fingers at 3 meters to 20/30 with correction; in the acute case it improved from *nil* to 20/200. The depth of the anterior chamber was improved in only the two cases of adherent leucoma.

The four unsuccessful cases were all chronic, one of them secondary (to plastic iritis, Case 3) and three of them were of the primary type of the disease (Cases 6, 7, 9). The tensions before operation were +2, +2, +1, +1; average, +1½; the probable duration, 5, 9, 18 and 0 months; average, 6½ months. In the secondary glaucoma case another cyclodialysis was of no avail, and as no iridectomy could be performed the eye was enucleated. In one of the three primary cases (Case 9), the anterior chamber was so deepened that a successful iridectomy could be performed, and in the remaining two patients (Cases 6 and 7), there has been entire freedom from inflammation, tenderness and pain for 11 months in each case, although the tension is now +2 in each. I do not, therefore, consider these last two cases unqualified failures, although I have listed them among the failures; on the other hand, a second cyclodialysis may permanently relieve the increased tension in these cases, as it did in Cases 1 and 2. The patients have each consented to a second cyclodialysis.

From my own cases, I am therefore in favor of giving cyclodialysis a further thorough, and if necessary, repeated trial in glaucoma, at least in eyes blinded by chronic increased tension, and especially that form caused by and secondary to anterior synechia and adherent leucoma, in which an iridectomy can not be performed or is inadvisable.

DR. H. GIFFORD, Omaha: This operation is an excellent example of one which was conceived on a wrong principle, but has turned out to do pretty good work. I think if you expect it to produce a permanent opening from the anterior chamber into the suprachoroidal space you are going to be disappointed. The results of the microscopic examination do not bear out any such theory, and on general principles it is absurd to expect it. What this operation does do is to cause a certain atrophy of the ciliary processes, which are factors in producing the hypertension. I think it is important to recognize that this is the way it reduces the tension, because if a second operation is to be done it ought not to be done in the same place, but in a different one, so as to produce as much atrophy of the ciliary processes as is safe. Some will remember a series of experiments by Deutschmann many years ago in which he excised the ciliary processes without serious reaction and without interfering with the general macroscopic appearance of the eye, except by reducing the tension very materially. That, I think, is an explanation of the results of this operation. I might say a similar explanation has been suggested by Krauss of Breslau.

DR. W. H. WILDER, Chicago: I am not prepared to draw any definite conclusions from the limited experience I have had with this measure, but I have tried it in four cases, in one of which the result was most surprising and gratifying. It was a case of acute glaucoma with tension plus 2, vision 20/100, steamy cornea, contracted fields, especially at the nasal side and shallow anterior chamber. On preparing to do an iridectomy, the chamber seemed so extremely shallow that I decided to do a cyclodialysis, as a preliminary to a later iridectomy. The operation was done with cocain anesthesia, and without difficulty. The following day the tension was normal and the pupil became smaller. In a few days the central vision began to improve, and at the end of two weeks I was pleased to note that the patient had 20/30 of vision, and that the fields had improved to about the normal limits. This fortunate condition remained for a period of four or five months, during which time I was studying the case, and then the man passed from my observation.

The operation might be performed as a substitute for anterior or posterior sclerotomy in those cases of acute glaucoma in which one wishes to lower the tension before attempting the more difficult iridectomy. If it is possible, as claimed by some observers, to reduce the tension gradually by proper and careful manipulation of the instrument with which the ligamentum pectinatum is detached, I can see now the operation might be valuable in cases of hemorrhagic glaucoma or in patients with extremely high tension in whom we fear hemorrhage or some serious accident in doing an iridectomy, or even a sclerotomy. In the other cases I had the results were doubtful, to say the least. In one it was repeated three times without good effect, but even a later iridectomy failed to relieve the condition.

Reinfection with Syphilis.—F. John has compiled 356 cases of reinfection with syphilis as recorded in international literature. The list includes 34 in which the first infection was inherited. His work is published as Nos. 525 of the *Sammlung klinischer Vorträge*, just issued, and forms a volume of 248 pages. The various cases are grouped in tables according to the manifestations of the second infection, and the opinions of 66 well-known clinicians are appended, some accepting the possibility of reinfection and the others doubting it. Neisser's experience with monkeys has converted him to the former view. John's conclusions from this material are that the evidence as to reinfection is not very conclusive to date, but that it seems probable that the acquired immunity is not absolute and becomes attenuated in time. Reinfection is no proof of the curability of the disease as it can occur with existing tertiary lesions. Reinfection is observed almost exclusively among the well-to-do. On the whole, he adds in conclusion, the majority of cases of reinfection on record are apocryphal.

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[*] Because of lack of space this table is omitted from THE JOURNAL, but it appears in the Transactions of the Section. A copy of the table will be sent to any one requesting it within four weeks and enclosing a stamped addressed envelope.

THE GENERAL PRACTITIONER AS AN ANESTHETIST *

DOUGLAS C. MORIARTA, M.D.
SARATOGA SPRINGS, N. Y.

My subject is of great importance to every practitioner of medicine, as there is none of us who does not have occasion at some time either to give an anesthetic or have one given. Any untoward result from the anesthetic affects the reputation of the operator; it matters not whether he is an isolated practitioner or a busy operator in one of our large clinics; for even if one expert in the administration of an anesthetic be in charge of the case the patient still looks to his surgeon for his safety and expects him to guard it.

You will agree with me that posing as a critic is not a pleasant position to assume, neither is it apt to be a popular one. Yet "fools rush in where angels fear to tread," and I shall venture to present my opinions in this very important field of our professional work. I feel sure it is the one field in the practice of medicine in which there is seemingly indifference and lack of proper comprehension.

At the beginning, I might say, I have reached the conclusion of many others, i. e., the danger of anesthesia is largely due to the anesthetist. I do not mean by this that there are not pathologic conditions necessitating a particular anesthetic which, when administered, may result disastrously for the patient, and the result be due entirely to the drug. But I do say that I believe it is safer for the average patient to have one of the more dangerous anesthetics, chloroform, for instance, administered by one competent to give it, than it is to have ether, the safest of all anesthetics, given by an indifferent practitioner. And by "indifferent practitioner" I mean a person who is careless in observing the physiologic action of the drug, or the pathologic condition produced by it; this, either through ignorance or because the anesthetist becomes interested in the operative procedures, or allows his attention to be distracted by those present, either nurses or visitors. Morally, I believe that we are occasionally responsible for a fatal anesthesia, and technically such a result approaches malpractice (and that we have not been called on to defend our acts in these cases, in civil procedures, is fortunate). That this is so is, to my mind, a stigma against our profession; for why should not a patient have as much right to expect and exact skill in this branch of medicine as in the treatment of a fracture, in a pneumonia or typhoid fever? And if a civil action were brought to recover alleged damages, and your attorney attempted to prove you qualified as a competent anesthetist at the trial, how much teaching or clinical instruction could you certify as having had? About all that the average practitioner could say, if called on to show himself qualified, would be that he was a regularly graduated physician and surgeon, and supposed to know and be familiar with anesthetics, their administration and resulting anesthesia. And, I ask, what percentage of us have received clinical training or instruction in the administration of anesthetics? The number is so small that it is a disgrace to our colleges. And the general teaching has not materially improved. Even at this present writing there are only a few of our colleges where this most important branch of our curriculum is taught clinically; and, to repeat, is it not a disgrace to those in which it is not? And, if the actual state of affairs were appreciated by the public, even by the board of regents, would not a reform be demanded in this particular?

Those of us who were not taught the proper administration of anesthetics while at school, and who realize our lack of education and skill and seek to inform ourselves in the art, must visit for this purpose the leading clinics of the country; for at what other place or institution can the knowledge be acquired? But the one who does so visit these clinics will do well if he is not deceived by the procedures of the anesthetists, who may there be witnessed doing their routine work. For I unhesitatingly state that during the past few years I have seen some of the most atrocious examples of this work in the clinics of surgeons of national and even international reputation that I have ever observed anywhere. I mention with much pleasure, however, two clinics where the technic in anesthesia seems ideal; I refer to the clinics of the Mayos of Rochester, and Crile of Cleveland.

The amount of information to be acquired in this art by a visit to either place, if you are accorded the privilege of observing their methods, is marvelous and well worth the time of any practitioner. If one has not the opportunity for such observation at these places, then some other instructive clinic should be substituted, or this particular work should be refused until the proposed anesthetist has properly prepared himself.

I purpose discussing the anesthetist only on the clinical side, and I state without fear of contradiction that those of us who are doing this line of work—I speak, of course, of the profession as a whole and do not include the few who have become proficient in the art—do not seem to realize or appreciate the responsibility or dangers, or our lack of the qualifications necessary, in order skilfully to perform the work we are undertaking. For surely, if we stop to think, we must know that the life, as well as the immediate comfort of the patient, is in our hands. In making these statements, I do not have in mind the desperate cases, which tax the skill of the trained anesthetist; nor yet the skill needful to determine the particular anesthetic indicated in some few pathologic conditions; or the method to be employed in particular cases. But I refer to the ordinary physician, administering an anesthetic as he is wont to do in his routine work, when the patient is considered to be in a safe condition to endure such procedures as are anticipated by the operator. Thus I believe the proper amount of care is not generally exercised in administering anesthetics, and I am constrained to say so, because my deductions are drawn from many observations, including my own work.

I may justly be criticized, and the question may be asked why I do not improve my methods, if I am convinced, as I have stated, of existing defects. My reply would be that it is easier to ask the question than to answer it with the proper justification. I admit that the fact that a patient can not pay for the skill of a trained anesthetist is no justification; neither is the fact that precedent directs that an interne must acquire the knowledge incident to the proper administration of anesthetics, as a matter of convenience, a justification; or that some associate is willing to serve in this capacity, although deficient in experience. And I might further emphasize the situation by saying that if we accept work necessitating an anesthetic, and serious complications follow its administration, there is no justification for us, unless a competent anesthetist was administering the anesthetic. For it goes without saying that all pa-

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* Read before the Saratoga County Medical Society, Feb. 14, 1909.

tients are entitled to, and should be given, the safest possible care when they place their lives in our hands, and how they may have it is the problem always confronting us. I am growing more and more to believe that only a few are adapted to this work; some will never be safe when serving in this capacity, regardless of opportunity or experience. Perhaps, like those in other special lines, anesthetists are "born, not made."

But to whom are we to trust our patients requiring an anesthetist, and what should be the qualifications of the one whom we shall select for this duty? The first part of this query seems easy to answer, and one might say, "Employ only a competent person." But how is the general practitioner, the occasional operator, or the small hospital always to secure a competent anesthetist? The only reply is that we should acknowledge our defects, if they exist as I have stated, and proceed to correct them by raising the standard of the whole profession in this art.

In opposition to this statement, it might be urged that the task, when the entire profession is considered, is too great, and it can never be accomplished. On the contrary, in my judgment, as soon as the necessity is appreciated by the profession at large, it will be met, as well and as easily as was the acquiring of aseptic methods in our surgical work five years ago, at which time it was shown that the safety of our patients demanded it.

The second part of the query is not difficult to answer, because a safe and proper technic is known; and it only remains for us to inform ourselves in regard to its details. Surely an anesthetist should be thoroughly familiar with, and trained in, the administering of the drug; he should know its action and peculiarities in different instances, and thus be able to recognize the earliest danger symptoms, and know how to meet them.

Watchfulness will prove a valuable prophylactic measure. The successful anesthetist will be an individual of keen perceptions, of good judgment, of a pleasing personality, and one capable of securing the confidence of the patient, and of controlling and arranging all details incident to the anesthesia, from the time he commences the anesthetic until the surgeon has finished.

Finally, an accurate knowledge of the relative sensitiveness of regional fields is imperative. No person who dislikes administering an anesthetic, or who has an irritable temperament, or gruff manners, and can not appear to be interested in the patient's welfare, or one who is habitually in a hurry or can not give his entire thought to the anesthesia, should ever be allowed or attempt to give one.

In every case in which an anesthetic is administered, there are certain imperative cardinal principles which should be scrupulously observed.

The anesthetist should never be in a hurry, as his apparent haste is apt to alarm the patient, while a few moments spent with the latter in quiet conversation is of the greatest benefit and invariably a time-saver. He should examine and determine for himself the condition of the lungs and heart, and if not previously informed should learn the condition of the urinary secretions. At this time he can also ascertain if there are any loose teeth in the mouth and determine if the patient is properly clothed. He should also explain that the sensation of choking produced by the anesthetic is a common one and is not attended with danger; and that if at this time the patient can control himself he will drop off to sleep quietly and easily.

Before commencing the anesthetic, emergency remedies should be at hand and ready for use. The time at which he should begin the anesthetic should be planned with the operator, so that the patient will not have to wait for the operator, as it is decidedly better and safer practice for the operator to wait for the patient.

The anesthetic to be used should be determined by the anesthetist and operator, and the method should be the one with which the individual is most familiar, and by which he can safely and easily produce the lightest anesthesia under which the operator may proceed. He should be in touch with the operator in the steps of the procedure that the sleep may be as light as possible and yet the operator not be delayed by too slight an anesthesia. A profound anesthesia is always dangerous and should be avoided if possible.

Once the anesthetist has begun, all unusual noise, bustle or excitement should cease. I do not mean that the usual preparations should not proceed, but they should be carried on in an orderly and methodical manner, that there may be no unusual noise to disturb the patient.

I am sure that there is a positive psychical advantage in the anesthetist's keeping up a conversation and talking to the patient from the time he starts the anesthetic; it reassures patients and quiets them and they will drop off to sleep more easily. Under no condition should he ever direct the patient to take a full long breath; and from the time the patient goes to sleep until the operation is finished he should be on the alert to the patient's condition, carefully watching the vital forces, as well as observing the earliest manifestations of approaching danger. I believe that the anesthetist should remain with the patient until he is safely in bed and in the hands of some one competent to determine postoperative complications.

In conclusion, I believe that the Anesthesia Commission of the American Medical Association should formulate specific directions for the guidance of the general practitioner, which should be an exact and concise description of the one best method to be generally followed, and this should represent the consensus of opinion. In making this statement, I am not unmindful of the value of the information contained in the report of this commission at Chicago in 1908, in which has been fully outlined the advantages of and contraindications against each of the several anesthetics, as well as the various devices employed in its administration. But I believe and know that the isolated general practitioner would very much appreciate and be greatly benefited by a direct expression concerning one method which he could adopt and feel secure that he was backed by such an authority. The directions should be concise, and yet in sufficient detail; possibly the advantages of such uniform procedure might extend to others who believe themselves competent. It would then only be necessary for the practitioner to differentiate in exceptional cases.

Resistance.—Dr. S. Flexner gives in his university lecture on "Public Health" at Columbia University (*Popular Science Monthly*, July, 1909) a clear exposition for intelligent laymen of the resources of the body for the resistance of disease and the artificial means of increasing them, developed by modern biologic research. The fact is clearly brought out that so far serum treatment has been successful chiefly in a prophylactic way because, when used with the disease well established, the destruction of a large number of bacteria is liable to set free an amount of poison with which the organism in unable to cope. This fact clearly appreciated by laymen, should give an added reason for attention to the public health.

THE ROENTGEN RAYS IN DENTISTRY*

G. E. PFAHLER, M.D.
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That the Roentgen rays are useful in dentistry needs no argument before this Section, and that they should be more generally used I believe will be affirmed by all who have had experience with them. Most of the patients who are finally sent to the roentgenologist for examination have usually suffered months and even years with conditions that only needed a Roentgen examination to make the diagnosis clear and the line of treatment definite. As a matter of fact, most of the patients that come to me are those who have finally reached the consultant, who recognized the importance of an examination. Some of these patients had been tampered with for months or years by general practitioners of medicine or dentistry, and often teeth have been unnecessarily sacrificed. Surely the dentist with the greatest experience needs this exact method of diagnosis least; and yet, I repeat, nearly all my patients come from the consulting dental surgeon.

There is scarcely a case in dentistry in which some definite information can not be obtained, but it would be absurd to say that every patient should be examined with the Roentgen rays. It is, however, only fair to patients that every chronic or obscure case should have the benefit of this method of exact diagnosis. The skill of the modern dentist is simply marvelous and it is the most expert who welcome aid in diagnosis.

OBJECTIONS TO AN X-RAY EXAMINATION

To-day there can be no real objection to an x-ray examination. It is clean, aseptic, painless, and absolutely without danger in the hands of an expert. The reason for discussing this subject is the morbid fear that has often been aroused in the minds of patients by stories published in lay journals. Most of these stories have been true, but the facts have been misinterpreted and misapplied. That the rays have done damage no one can deny, but practically all damaging results occurred in the early days of roentgenography or in the hands of incompetent men.

During the past nine years in which I have been specially interested in dental roentgenography I have never had a harmful result following one of these examinations. To-day they are made with a few seconds' exposure, usually not over five, and never over thirty seconds. Any danger present to-day comes to the operator, who should do no work until he has learned to protect himself.

The fluoroscope has no place in dentistry. It is clumsy, inaccurate and dangerous to both the patient and operator. Lange[1] says:

> To the indiscriminate use of the fluoroscope many of the early errors in x-ray work can be directly traced. The image on the screen bears no comparison to the fine detail and distinctness which is obtained in the photographic plate or film.

A FEW HINTS IN TECHNIC

The rays should be confined to the area examined. They should be directed accurately to the point of greatest interest. This can be accomplished by means of the localizer which I described two years ago[2] before this Section. The same result can be fairly well accomplished when small cylinders are used. Secondary rays should be eliminated by means of diaphragms and cylinders.

When the disease or symptoms are confined to a few teeth or roots, and especially when affecting the upper jaw, the best results are obtained by placing a small film in the mouth. In this way the film is brought into almost direct contact with the teeth and the alveolar process, and the most beautiful detail is obtained. If, however, the bone, the accessory sinuses or large dental areas are to be studied, the roentgenograph is best obtained by the use of a plate placed outside of the mouth or face. Before this Section two years ago I described the technic by which every part of both the upper and the lower jaws could be clearly shown on the plate. Generally speaking, one should expect only two or three teeth clearly shown on either film or plate, and on this account the dentist should designate as nearly as possible the area to be examined.

The use of the plate is absolutely necessary in the study of the bone or the accessory sinuses, but it is also very desirable in searching for missing or unerupted teeth, in which instance a small film might not include the missing tooth and might thus lead to an error. Generally I use both film and plate and thus make one confirm or rectify the other.

The roentgenograph or x-ray picture is an accurate photographic record of the variations in density of the tissues traversed by the rays. The rays obey absolute physical laws, and when there is any error from their use it is due to the one who uses them or the one who interprets the plate, and not to the rays. The interpretation of the plate or film is much more difficult than the making of it. For the proper interpretation of the negative one should know the conditions under which the plate was made and the appearance of the normal tissues under such conditions; also, one should in a general way be familiar with the pathologic appearance of the tissues. I believe that the best results will be accomplished if the roentgenologist and the dentist confer on each difficult plate.

The degrees of density as measured by the rays are, in order, as follows: The greatest density is shown by metallic fillings, then by root fillings; next in density is the enamel, then the dentine, and finally the cancellous structure of the maxilla and alveolar process.

The value of a roentgenograph depends very much on a careful study of details, and therefore one of the first requisites is that it show rich detail. For observing the fine lines of the tooth-structure and of the alveolar process the negative or film itself must be used, and this must be good. Much is lost in any reproduction.

THE STUDY OF THE NEGATIVE

Next in importance for reading a roentgenograph is a careful lighting of the film or negative. A uniform white light is necessary. This white light can best be obtained by means of an illumination box, or by light reflected from a sheet of white paper, or by light reflected from the northern sky. The film or negative should be surrounded by a black surface so that the eye can be concentrated on the small point of study. If attention be given to these points, almost every one can appreciate the value of the examination. Very often good negatives are condemned by untrained men, because they see little or nothing when they hold the negatives before a gas or electric lamp. This gives a yellow light and the beautiful detail is thus lost.

Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Lange: Lancet-Clinic, May 16, 1908.

[2] Pfahler, G. E.: The Roentgen Rays in Oral Surgery, The Journal A. M. A., 1908, l, 432.

If studied by correct methods, the ordinary film should show that the root is smooth in contour, although it may be variously curved, and that the cancellated alveolus hugs the tooth closely. The root canal can usually be easily recognized and is smooth in outline. The dentine is normally uniform in density. The alveolar process is uniformly mottled and shows the beautiful cancellous network.

ROOTS, ROOT-ABSCESSES, EXOSTOSES, AND PULP STONES

Now, what are the pathologic appearances and conditions that may be observed? Points of decay or abscess within the root itself show an interrupting disturbance in the dentine indicated by a light area.

Incomplete filling of the root canal may be shown. A pericementitis is shown by a light space between the root surface and the alveolus, and the root surface is roughened. Abscesses about the tip of the root or in the alveolus are likewise recognized by light areas in which no cancellous structure can be made out.

Many of the cases coming before the dentist present symptoms of obscure origin; sometimes sinuses exist whose source is a riddle, and these may persist for a long time. Probing seems to be attended with some danger of spreading the infection to healthy tissues. Sometimes these abscesses follow dental work, either crowning or filling. At other times inflammation may exist simultaneously with the dental work, but in no way connected with it. The dentist will feel much relieved when it can be clearly demonstrated that his work is not responsible for the inflammation and pain. Schamberg says: "It has become an invariable rule with me to take a radiograph of every chronic abscess before performing any operation, and occasionally I take a second or third radiograph to note the progress of the case."

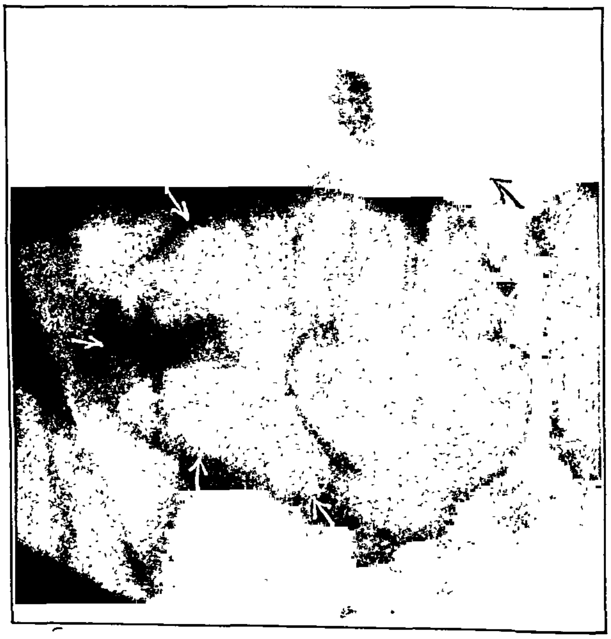

Fig. 1.—Pus in right antrum. See clear left antrum. Case of Drs. Gleason and Starr.

When men like Cryer, whose wide experience and skill in the use of the probe is recognized by all, make constant use of the rays as a diagnostic agent, its superiority over other methods can not be questioned.

The roentgenograph will make plain whether the root or only the alveolar process is involved, and consequently help to decide whether the abscess should be drained through the pulp canal or through the alveolus, and if through the alveolus whether a simple curettage would suffice or whether apical excision be necessary to eradicate the infection. Furthermore, the roentgenograph should show how much of the root should be removed. Dray says:

> Much untold suffering could be avoided, many guilty blunders obviated, many blessings bestowed on the dentist by the use, in the hands of the expert, of the x-rays. The dentist who fails to use this wonderful adjunct of modern dental diagnosis and therapeutic agency must go through life with a blunt or troubled conscience.

Lange asks:

> Would it be ultrascientific to suggest the aid of the skiagraph in all operations on the root canal? In the various manipulations on the root canal the dental surgeon is working more or less in the dark. In cleaning out such a root canal, owing to varying shapes and lengths of roots, it may be impossible to determine whether or not the apex of the root has been reached. By inserting a fine broach into the canal and skiagraphing the tooth with the broach in position this point may be cleared up. In drilling out a root canal for the insertion of a pin or post for anchorage, this same procedure will tell whether you are drilling in the right direction and whether deep enough or not.

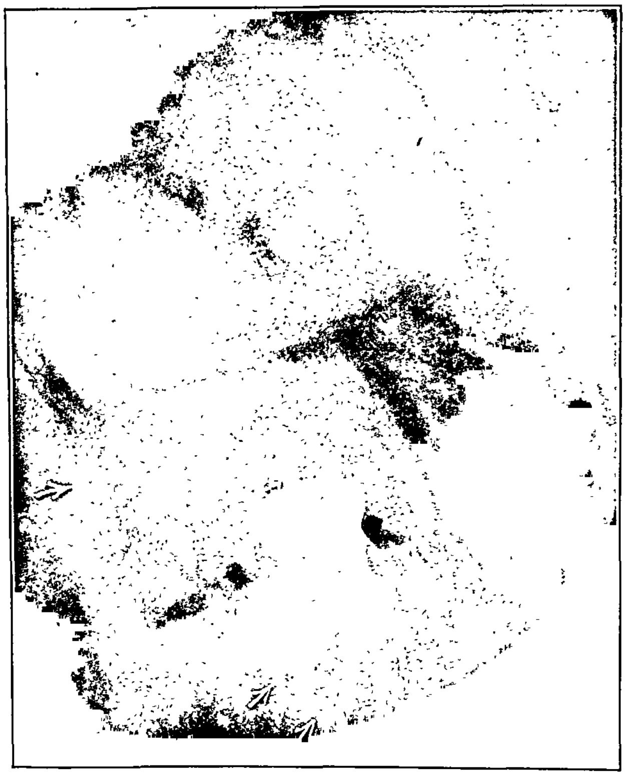

Fig. 2.—Shows cause of pus in Figure 1. Abscess about root, with pericementitis.

In several cases in which the roots were curved, I have found that the drilling extended through the side of the tooth and into the alveolar process instead of to the tip of the root canal.

Exostoses of the roots seem to be rather frequent. They cause much suffering and often explain failures in removing roots in the process of extraction.

Whorls (dense areas of bone) have been found by Cryer to explain some of the obscure cases of neuralgia.

Pulp-stones, by no means rare, cause much suffering and may be demonstrated in the roentgenographs as shown in one of my slides.

UNERUPTED, IMPACTED, SUPERNUMERARY, AND ENTIRE ABSENCE OF TEETH

One of the most important uses of the rays is the detection of unerupted, impacted, supernumerary teeth and the absence of those that should normally exist. The development and eruption of the teeth can be followed from the very beginning, and if the rays are used early the orthodontist can surely correct more easily the deformities that occur. If one follows the development of a tooth from its very incipiency, one first detects the formation of the enamel cusps, then the crown; later the root of the complete tooth with its pulp canals.

Unerupted teeth sometimes assume such freakish positions that it seems unwise to wait and guess, when we have at hand a painless and accurate means of diagnosis. Much suffering and annoyance may thus be avoided.

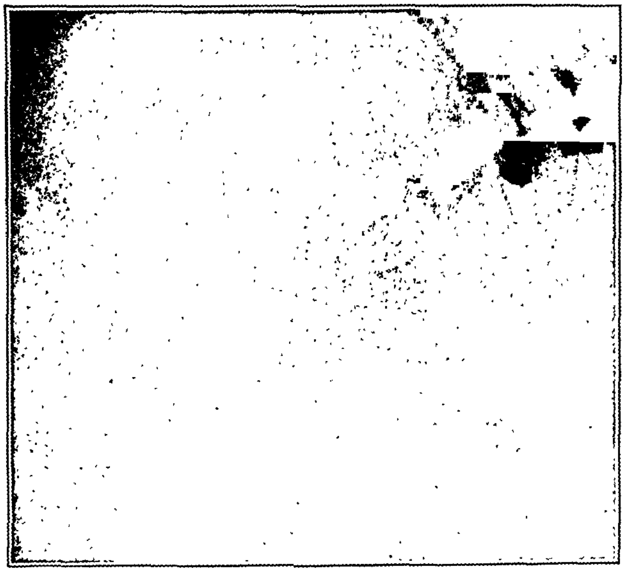

Fig. 3.—Impacted third molar. Dr. Dray's case.

Impacted teeth are rather common; the trouble affects especially the third molar, though any of the teeth may be affected. The tooth may even be inverted and be growing in the opposite direction to the normal position. These impactions usually cause great suffering and often the destruction of adjoining teeth, leading to abscess formation with surrounding inflammations, etc., which interfere with mastication and deglutition and lead to serious conditions. These impactions are often the cause of obstinate and persistent neuralgias.

All orthodontists agree that the deciduous teeth are often sacrificed too early, leading to undevelopment or later deformities of the jaws. On the other hand, a deciduous tooth often interferes with the eruption of the permanent, and causes much unnecessary suffering What other accurate guide have we in the control and observation of erupting teeth?

THE MAXILLA AND THE ACCESSORY SINUSES

The affections of the maxilla and the accessory sinuses are generally brought to the attention of the general medical or dental practitioner. If he fails to realize the possibility of disease in these areas and fails to use the roentgenograph as an aid in diagnosis, much valuable time will be lost and much unnecessary suffering will result.

In the lower jaw we must consider especially fractures, necrosis, tumor formation, and cystic degeneration. The location of a fracture is indicated by a transparent line, usually jagged in outline. Its union is indicated by the gradual disappearance of this line and by the formation of callus. Non-union is indicated by the persistence of and widening of this line and by the formation of sinuses, and often by the formation of excessive but unhealthy callus. The roentgenograph will thus aid materially in deciding on the line of treatment and especially determining whether the interdental splint should be used, or whether the case calls for the wiring procedure. If wiring be decided on the roentgenograph will indicate the best points for the drill holes. Not infrequently these fractures will be found to have been preceded by abscess formation at that location. The knowledge of the presence of an abscess will surely be important in deciding the line of treatment.

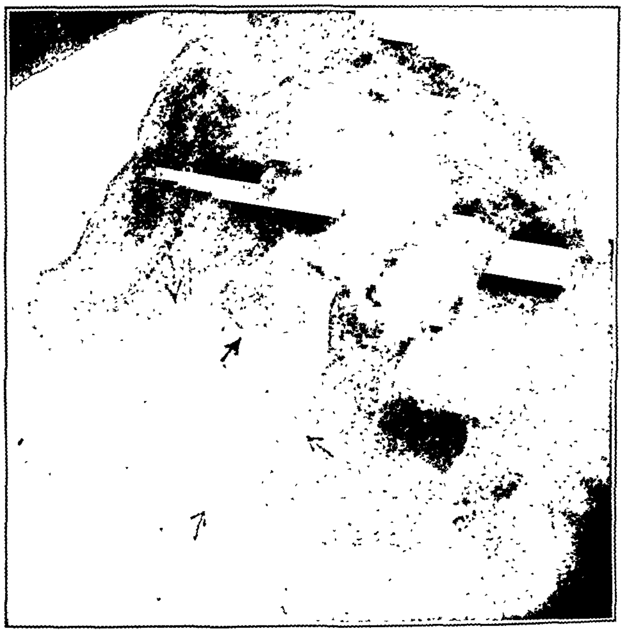

Fig. 4.—Bone cyst. See inversion of erupting teeth. Dr. Schamberg's case.

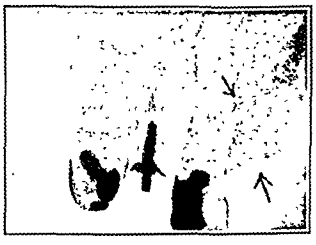

Fig. 5.—Curved incisor, showing hole drilled through the side of the tooth. Dr. Ickes' case.

Necrosis is indicated by a disturbance in the fine network of the cancellous structure of the bone, usually consisting in increased transparency due to destruction of the bony elements.

Tumors of the lower maxilla are shown by a destructive disturbance in the cancellous structure of the bone, but it is less definitely outlined than in necrosis and abscess formation, fading more gradually into the healthy bone, and is often associated with the formation of new tissue. Carcinoma seems to cause more destruction of bone and less formation of new tissue than sarcoma. Most of the tumors seem to be sarcomata and the rays will assist in determining whether only the periosteum or the bone itself is involved. The extent of the disease can also be determined and thus material assistance be secured in outlining the treatment.

Cystic degeneration in the bone is comparatively rare, but it should be borne in mind in obscure cases and it can only be accurately diagnosed by means of the rays.

If the upper jaw is involved by necrosis or the formation of a tumor, its demonstration is more difficult than the same in the lower mandible. Affections of the antrum as well as of the other accessory sinuses leading to the accumulation of pus or tumor formation can be nicely demonstrated and often the cause can be shown by the use of the *x*-ray. It is well to know whether the pus in the antrum is due to a decayed tooth or not. The *x*-ray will also show at what point the antrum should be drained; the most dependent portion of the antrum can be determined and the best drainage obtained.

THERAPEUTIC APPLICATION OF THE RAYS

The application of the rays therapeutically has been less extensive, though there have been sufficient scattered reports of good results to justify its consideration in obstinate cases and when other methods have failed.

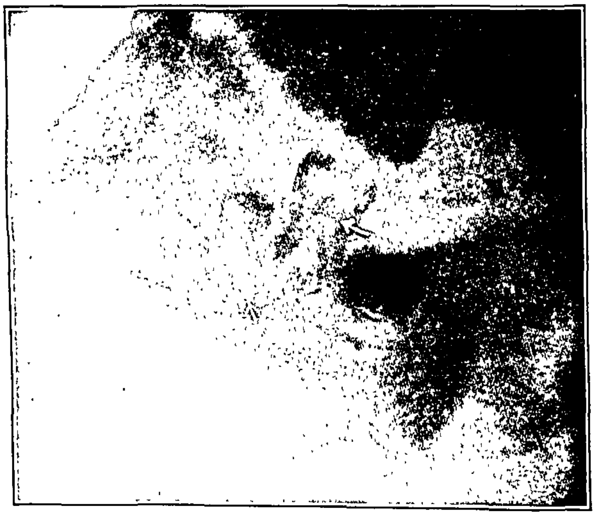

Fig. 6.—Showing pulp stone in crown, and abscesses at the root. Dr. Schamberg's case.

I have myself seen marvelous results in the treatment of sarcoma of the bones and sinuses of the face. I have seen pyorrhea of the antrum that resisted all other forms of treatment, including repeated curettement, get well under the influence of the rays. Obstinate cases of idiopathic neuralgia will sometimes yield quickly. I have seen good results in old and obstinate cases of pyorrhea alveolaris. Dr. Weston A. Price, of Cleveland, has made the best reports[3] on this subject.

CONCLUSIONS

1. There should be a more general use of this valuable diagnostic and therapeutic agent in dentistry.
2. It is without danger in the hands of an expert.
3. It is a painless, aseptic and accurate means of diagnosis.
4. All parts of the jaws can be shown on the plate. The finest details of the tooth structure and alveolar process can be best obtained by using a film within the mouth.
5. This method of diagnosis should be used in obscure cases, especially in chronic abscesses, the examination of roots and pulp canal fillings, etc., of offending teeth with persistent non-yielding pathologic conditions.

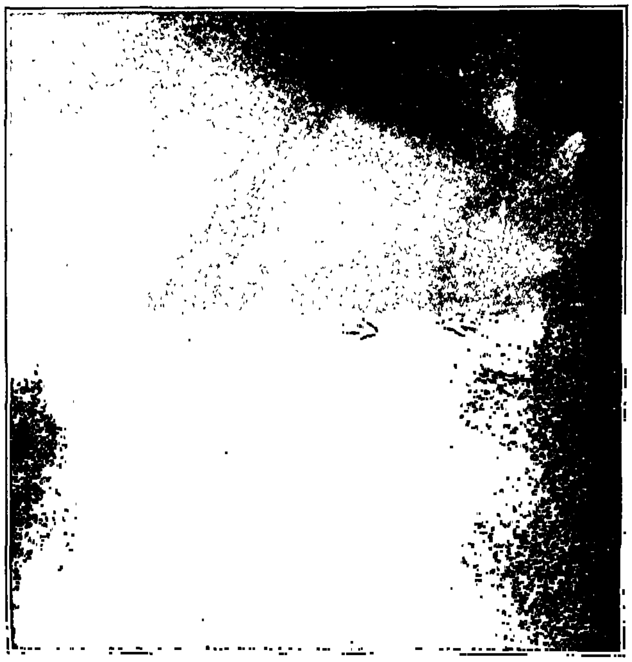

Fig. 7.—Fracture of styloid process due to pressure by dentist back of the angle of the jaw. Dr. Laplace's case.

6. The rays are particularly useful in diagnosing unerupted and impacted teeth, root abscesses and alveolar abscesses, exostoses, tumors and necrosis and, last but not least, pulp stones.

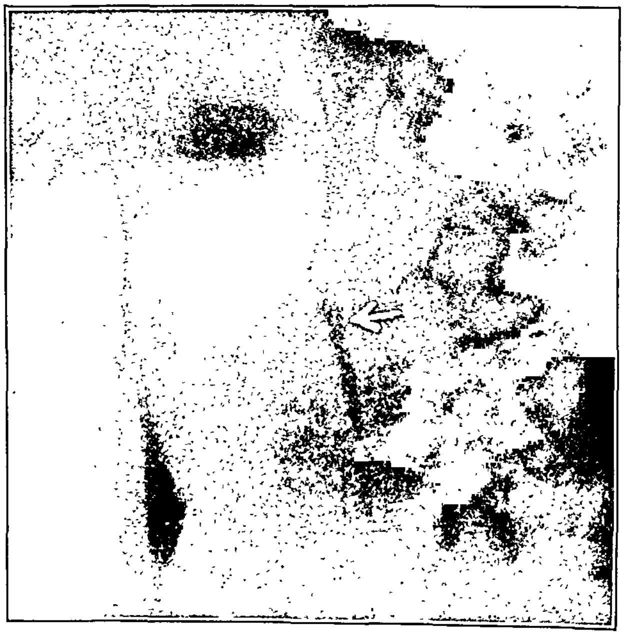

Fig. 8.—Same case as Figure 7. Healthy side. Shows abnormally long styloid process.

Finally, I desire to express my appreciation of the courtesy of Drs. Cryer, Dray, Schamberg, Cameron, Warren, Faught, Mershon, Babcock, Cupid, Bernds and Gray and others in referring these cases.

1321 Spruce Street.

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[3] Cleveland Dental Society, Jan. 4, 1904.

ABSTRACT OF DISCUSSION

Dr. Sidney Lange, Cincinnati: The picture of the pulp stone in the pulp chamber was of especial interest to me. I have seen a number of patients with so-called facial neuralgia (for want of a better term) who had gone from dental surgeon to rhinologist and back again without getting relief. In this class of cases the *x*-ray will often indicate the source of the trouble and in not an inconsiderable number I believe the cause will be found to be a pulp stone irritating the nerve endings. The aid which the *x*-ray lends will certainly be most grateful to these patients. Another method in *x*-ray diagnosis has served me in good stead and that is the tracing of sinuses and areas of necrosis by injecting a bismuth suspension and then skiagraphing. This method is especially valuable in outlining areas of necrosis between the inner and outer plates of the alveolar processes. The picture of the fractured styloid process was a revelation to me. Attention is now being directed to injuries of this bony process and the value of the *x*-ray in this connection is inestimable.

I recall an unusually interesting case of a type not touched on by Dr. Pfahler in his demonstration. The case was one of intra-alveolar fracture of the root of the tooth from a blow on the crown. The patient complained of soreness and pain on pressure yet the tooth was apparently sound and firm. The *x*-ray revealed a transverse fracture of the root not far from its apex.

Dr. Arthur R. Dray, Philadelphia: Recently a well-known dentist of Philadelphia, talking on the subject of *x*-ray in dentistry, said something as follows: "I have been considering the use of the *x*-ray in dentistry for several years, and have come to the conclusion after an exhaustive study, that it is useless." The truth is that the *x*-ray is very valuable in dentistry, as Dr. Pfahler has most conclusively shown. First, in detection of undeveloped teeth; then in detection of impacted teeth with abscesses. The pulp stone may be detected by the *x*-ray—the neuralgic symptoms produced by other conditions are so similar to those produced by pulp stones that only the *x*-ray can determine the true cause when it is pulp stone that is the factor. The results of *x*-ray treatment in pyorrhea have been remarkable. Antral troubles, exostoses, erosion of the roots, areas of necrosis, cysts, different tumors, fractures of the jaw and the roots of teeth, can all be wonderfully cleared up by the use of the *x*-ray. In some cases—sarcomata, carcinomata, fractures, etc.—we are absolutely dependent on the *x*-ray; and last, but not least, in detecting perforation of roots and lost portions of the instruments left behind by the absent-minded dentist. We need the *x*-ray to help us to progress with modern science.

Dr. Charles K. Teter, Cleveland: I can not understand how any dentist of to-day could state that the *x*-ray is of no use in dentistry. It would be a good thing for many of the dentists if they could have the *x*-ray thrown on their work after they are through with it, especially in treating root canals. Not long ago I heard a dentist say there was not a root he could not fill to the apex. We arranged an experiment where the roots were placed in plaster and given to this dentist to fill, which was an easier proposition than it would have been in the mouth. I am not in a position to give the absolute number of teeth that were filled, but less than a fourth of the number were filled to the apex. If they could all have the *x*-ray thrown on their work afterward they would know the exact conditions. Another point: the value of the *x*-ray depends to a large extent on the manner in which the pictures are interpreted; it takes a trained man to interpret them correctly. The average man can not do it.

Dr. Arthur Zentler, New York City: Dr. William B. Dunning read a paper some time ago before the Institute of Stomatology in New York, describing a new method of filling root canals with a combination of paraform, paraffin and zinc oxid. This method, which undoubtedly is known to a good many of you, consists in melting this solid mass at the orifice of the root canals, introducing it by capillary attraction up to the apex. The question is raised whether capillary attraction will carry the melted substance to the extreme end of the roots, in which case after solidifying it would act as a permanent, good root canal filling. There is no other way of proving conclusively that it reaches the end of the root canal except by the radiograph, which in this, as in other cases mentioned by the essayist and other speakers, remains the decisive test.

Dr. Stewart L. McCurdy, Pittsburg: I have been impressed with the value of the *x*-ray as a method of making diagnosis in every branch of surgery for a great many years, and have been using it constantly. The question of *x*-ray interpretation referred to by Dr. Teter is important. It would be impossible for a man who did not know the normal anatomy of the face to interpret these pictures properly. It is only by constant and repeated readings, with the normal skull present, that these interpretations can be made correctly. The method of focusing the *x*-ray at various angles is of value in giving us a view of the entire field. The constant presentation of the subject by the men who believe in it and a campaign of education among the dentists is the only thing that will bring the *x*-ray to its proper plane of usefulness.

Dr. Arthur R. Dray, Philadelphia: There is one phase of the subject I would like to ask Dr. Pfahler to lay stress on, viz.: the all-important fact that it depends on the skill of the one who manipulates the *x*-ray apparatus whether we will discard it or accept it. This was brought to my attention forcibly some time ago. A patient was brought to me for treatment who had been told by his medical adviser that he was suffering from a malignant growth of the inferior maxillary bone. I requested an *x*-ray examination to be made by Dr. Pfahler. It showed what I had suspected, an encysted unerupted tooth. The patient was about 70 years of age and gave a history of the teeth having been removed years previously, thus throwing the medical man off his guard.

I found out months afterward in talking with this patient that an *x*-ray picture had been taken of this same case, before Dr. Pfahler examined him, which did not show anything of the encysted tooth so clearly demonstrated in the second picture.

Dr. G. E. Pfahler, Philadelphia: The only safe way is to have the work done by a man who is thoroughly competent. I think that poor work in this line is worse than none at all. The dentist and the *x*-ray man should work together. The dentist should give all the information he can as to the probable location of the lesion. After the picture has been taken, I always try to have a conference with the dentist, either by sending in my report with the plate and discussing it afterward, or by meeting and conferring personally. While many negatives are clear in diagnosis and could be read by any one, others are obscure and could only be safely interpreted by conference.

RECONSTRUCTION OF THE BILE DUCTS *

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NEW YORK

This paper is an outgrowth from one branch of work done for Dr. J. W. D. Maury (Associate in charge of Surgical Laboratory) in his search for the cause of death in high intestinal obstruction.

The available literature fails to reveal a method for the construction of an intra-abdominal sinus for biliary drainage. This procedure depends on the use of a rubber tube, at one end of which a rubber sponge, or an ordinary surgical sponge, is securely attached (Fig. 1). The tube should be approximately the size of the common bile duct, and the diameter of the sponge should not be greater than one-half the diameter of the duodenal lumen. The length of the tube depends on the length of the biliary passage to be reconstructed.

The operative technic followed in this experimental work is roughly as follows: The common bile duct is exposed, ligated and cut across just above the ligature. Two plain catgut No. 1 sutures are introduced in the opposite edges of the gaping duct, and in the rubber tube, in such a manner that when the sutures are tied down, the knots will be on opposite surfaces of the duct, and the tube drawn within the lumen of the duct a distance of approximately 1 cm. (Fig. 2). The tube is then applied to the anterior surface of the duodenum (Fig. 4), and at approximately every inch is sutured to the duodenal wall with fine catgut. At a point about opposite the ampulla of Vater, an incision is made in the duodenum, just large enough to allow the insertion of the sponge and attached tube into the lumen of the intestine. The sponge is shoved down inside the intestine, and the opening in the duodenum is sufficiently repaired so that the cut edges snugly encircle the tube. At this point—where the tube penetrates the intestinal wall—a No. 1 plain catgut suture is inserted, taking a good bite of duodenum and a small bite of the tube, so as not to encroach on the lumen of the tube. This suture does two things—it prevents the peristaltic pull on the sponge from tearing the two duct sutures free, and it minimizes biliary colic, as has been demonstrated in dogs. The duodenal walls are then sutured over the tube so that for about 2 cm. before the tube penetrates into the intestine, it runs in a canal made by overlapped duodenum. The great omentum is then drawn up, and a suitable area selected with which to cover the exposed portion of the tube. This area is traumatized by slightly drawing a dry sponge over it a few times, and similar friction is applied to the duodenum and gastro-hepatic omentum on either side of the tube. The omentum is then placed so as to cover the tube and extend beyond it a centimeter or two in all directions, and is held in position by several fine catgut sutures (Fig. 5).

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* Read before the Surgical Section of the Academy of Medicine, New York City, and before the Surgical Association of the Alumni of the College of Physicians and Surgeons.

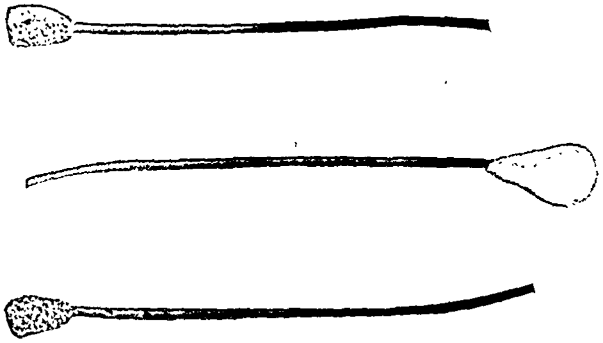

Fig. 1.—Types of tubes and sponges used in reconstructing bile ducts.

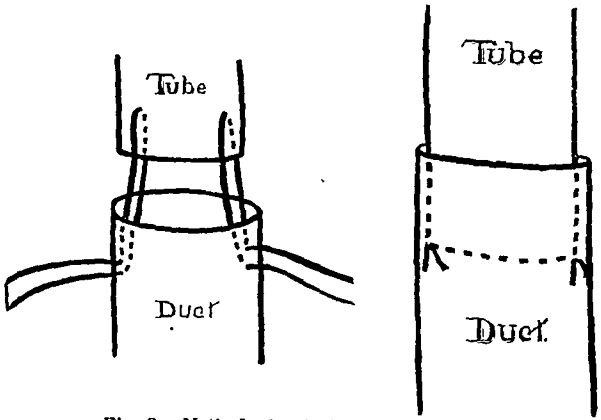

Fig. 2.—Method of suturing tube into duct.

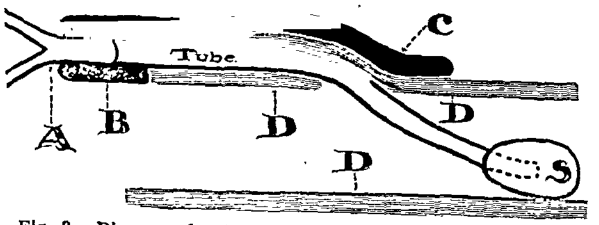

Fig. 3.—Diagram showing introduction of tube and sponge into duodenum. A, hepatic duct; B, gastrohepatic omentum; C, great omentum; D, duodenal walls; S, sponge.

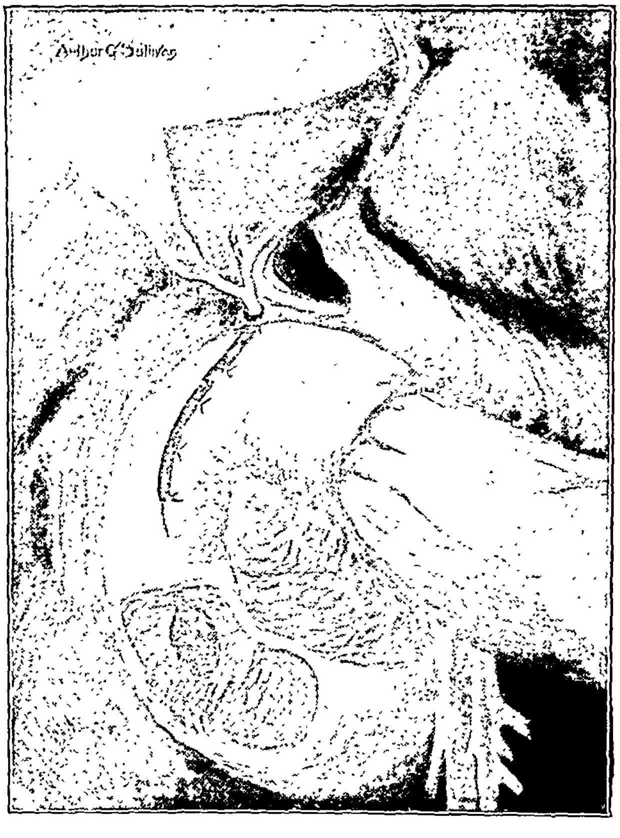

Fig. 4.—Tube sutured to duodenal walls; adapted from one of W. J. Mayo's drawings.

Eight dogs have been operated on in this manner, and the following facts observed:

Dog 1 was operated on eleven weeks ago, and a plain tube, without sponge attached, was used. Fifteen days later his abdomen was again opened, and the tube drawn out through a buttonhole incision in the duodenum. The ease with which the tube slipped out suggested that the peristaltic action of the intestine could well supplant the second operative procedures.

Dog 2 was operated on nine weeks ago, and a tube with a rubber sponge tipped end was inserted. Owing to my anxiety to have the peristalsis fulfil anticipation, I used very fine plain catgut throughout (No. 00), with the result that tube and sponge were passed sixty hours later. No harm resulted, however.

Dog 3 was operated on seven weeks ago. The rubbber sponge was passed two days later, it having torn from the tube because of faulty ligation. Consequently the tube itself was removed several days afterward, through very small incisions in the abdominal wall and duodenum, as in Dog 1.

Dog 4 had a tube and rubber sponge inserted in him five weeks ago, and passed both intact seven days later.

It occurred to me that a rubber sponge might not be procurable in case of emergency, and consequently I took a surgical sponge, stitched it so that it would not unfold, sutured it to a rubber tube, and introduced it into the next subject.

Dog 5 had the surgical sponge and rubber tube inserted, and eight days later tube and sponge were passed.

Dogs 6 and 7 were operated on three weeks ago, and *Dog 8* two weeks ago. Cholecystectomy was done in all three, and hepaticus was connected with the duodenum, the usual technic being employed. Dog 6 passed his tube on the eighth day, Dog 7 on the sixth day and Dog 8 was killed by ether a few days after his operation to secure a specimen (Fig. 6), which shows the tube *in situ*, connecting hepaticus and duodenum, with the gall bladder removed.

Another specimen (Fig. 7) was taken from Dog 5 two days after he passed the gauze sponge and tube. From the latter specimen several microscopic sections were taken and the pathologist reported that the mucosa had grown upward from the duodenum, and downward from the duct, into the new formed tube. At its middle part the walls are composed of peritoneal tissue. There is absolutely no evidence of inflammatory deposit. It will be noted, as shown in Figure 3, that the new-formed tube is made up of peritoneal tissue in its entire extent.

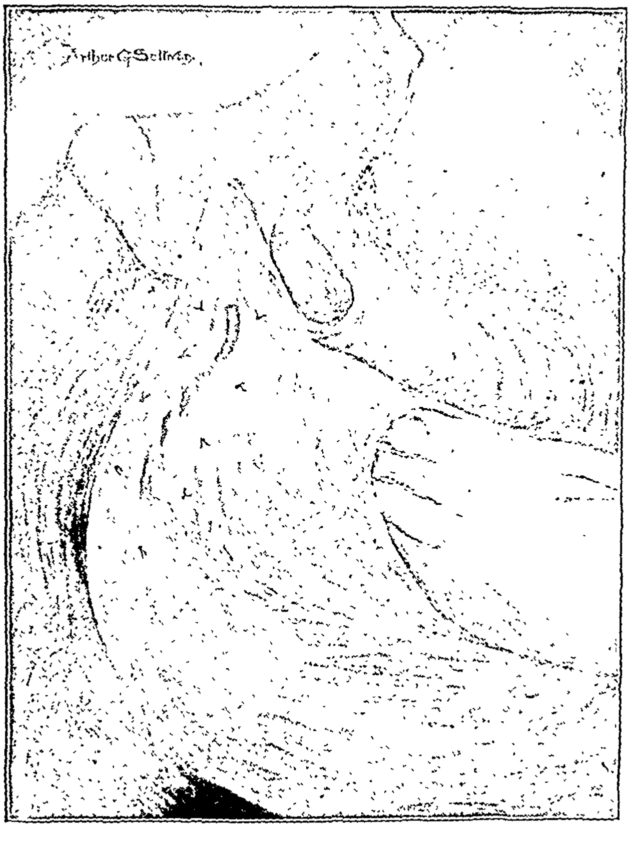

Fig. 5.—Great omentum drawn up and sutured to form anterior wall of reconstructed passage.

Nothing which could be called unusual postoperative care was given these animals. Their regular diet was allowed them within thirty hours, and yet all, save those from which specimens were removed, are delivering bile in normal amounts, to say nothing of being alive, well, and in the best of spirits. Careful watch was kept of all feces and no sign of acholia appeared, nor was there a symptom of leakage or peritonitis.

On analyzing the constituent steps in this work, it is at once apparent that the operation is merely a combination of more or less accepted technical details. The drainage of the hepatic duct by rubber tube, set forth by Abbe, is recognized. Witzel's method of gastrostomy is roughly similar to my method of implanting the tube in the duodenum. Kehr has successfully used gastric wall to bridge over a deficiency in the wall of the common duct; and the use of omental grafts to cover such apertures is a fairly common proceeding.

For the benefit of those who might feel inclined to perform this experiment on dogs, I wish to emphasize the necessary steps.

1. It is essential that the tube be placed within the duct, and not in the reverse order.
2. The duodenal wall must be folded over the tube for a distance of 2 cm. before it plunges into the lumen of the intestine.
3. The restraining stitch, which temporarily prevents traction on the upper portion of the tube, should be put in.
4. The tissues forming the walls of the tube must be lightly traumatized.
5. The sponge should not occupy more than half the lumen of the intestine and especially when a gauze sponge is used.
6. In case cholecystectomy is done, the gall bladder fossa should be obliterated by stitching the lobes of the liver together, thus avoiding hemorrhage, which is difficult to control in dogs.

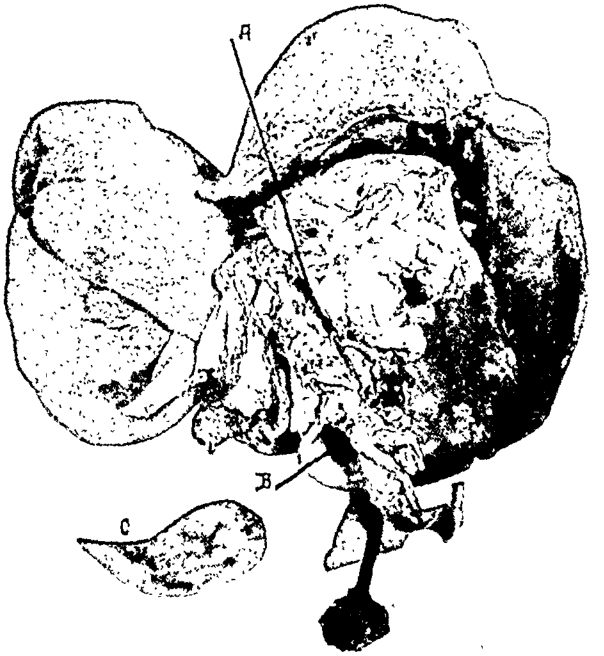

Fig. 6.—Specimen from Dog 8. A, omentum cut away to expose tube; B, duodenal lumen; C, gall bladder.

In the last two operations, the sponge which was inserted was compressed as much as possible, by taking several turns of No. 3 plain catgut around it. My experience has been that catgut in the lumen of the dog's duodenum is disintegrated about three times as rapidly as that placed in the body tissues. So by using the heavier gut, with which to compress the sponge, one very greatly diminishes the peristaltic tug on the tube for a few days after the operation, until finally the sponge breaks its bonds, expands, and is then ready to do active work at approximately the same time that the catgut holding the tube in the duct is absorbed. The advantage of having the tube undisturbed the first few days is obvious. I have one dog which was operated on 104 days ago. At that time I put a tube in him with the idea of keeping it *in situ* permanently. He is in the best of health and no signs of discomfort from the tube are apparent.

This is the "reconstruction of the bile ducts," an operation which I believe involves a new surgical principle. If the dogs survive a month or two longer without untow- [illegible] resent the same, or more favorable [illegible]. then as now, I advocate this technic in persons requiring artificial connection between the biliary passages and the intestine.

If a single hepatic duct, or the common hepatic duct, needs repair, a small tube, properly fenestrated so that it will not occlude the biliary tributaries, or the duct of Wirsung, might be passed from within the duodenum through the ampulla of Vater, up the common duct to the point where reconstruction is desired. This would more closely approximate normal conditions.

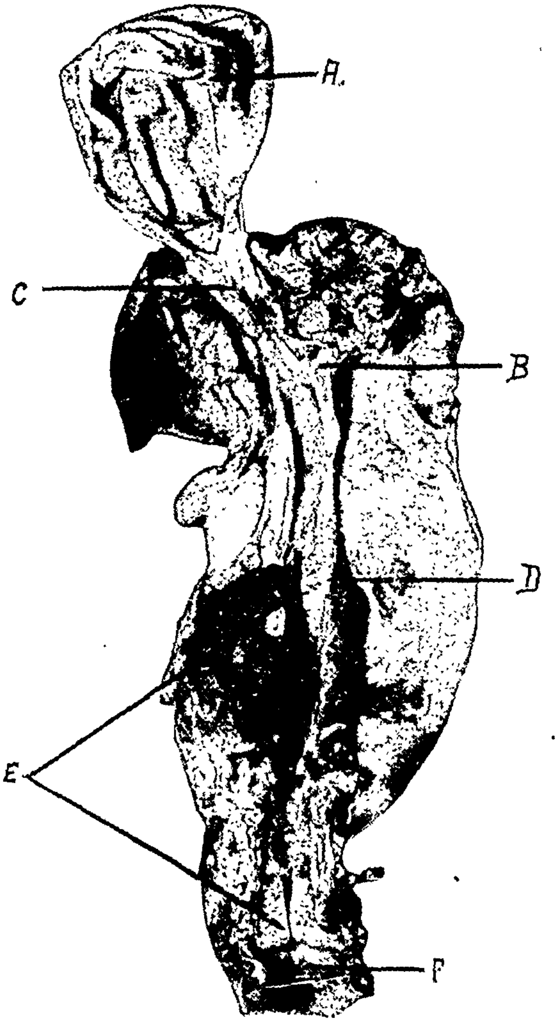

Fig. 7.—Specimen from Dog 5.—The aperture in the floor of the reconstructed duct, just as it enters the duodenum, is the result of a section taken for microscopic examination. A, interior of gall bladder; B, hepaticus; C, cysticus; D, end of common bile duct; E, reconstructed duct; F, duodenal lumen.

SUMMARY

1. There is no technic for duct reconstruction in general use.
2. In the operation described the reconstructed canal is made of formed tissues, rather than inflammatory deposits.
3. Both ends are protected by mucosa.
4. There was no mortality in eight cases.

I am much indebted to Drs. H. H. Janeway and J. W. D. Maury for their kind aid.

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EXPERIENCE IN THE EXPRESSION OF CATARACTS IN THE CAPSULE BY THE SMITH METHOD *

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When Major Smith's article[1] on the extraction of cataract within the capsule by external manipulation appeared I became interested in the possibilities of the method and gave it such trial as I was capable of at that time in twenty-two cases. These were hastily brought together and not selected. The results were thought to be not satisfactory at the time and were so reported,[2] but further observation has shown that a very fair percentage of the patients did well. In the beginning it should be stated that I have only included in these later statistics cases of operation in which I have supervised the after-treatment and determined the refraction.

Of all the operations which have been proposed for the removal of cataract, no one of them and no combination of them offers such a complete and satisfactory disposition of the capsule, which is the beginning, middle and end of most of our after-troubles, as extraction within the capsule.[3] This is so evident that if any added risk is incurred in doing the operation it seems more than offset by what is gained in the comparative freedom from the complications which are liable to follow the regular operation. Regarding these complications, Knapp long ago called attention to the fact that iridectomy alone was a comparatively safe procedure, but that opening the capsule and extracting the lens added other elements of danger to the traumatism of the iridectomy, and changed the condition to one of danger to the eye in a certain proportion of cases. These elements of danger consisted in the mechanical irritation of the lens débris to the cut and torn surface of the iris[4] Hess and Schirmer regard this irritation as due to infection.[5] "It seems more than probable that the inflammation is due to the chemically altered lens substance which acts as an irritant, but whether it is trauma, infection or chemical irritation, it is generally acknowledged that the postoperative dangers—iritis, cyclitis or iridocyclitis—are in some manner attributable to the cortical débris."[6] If the true explanation of the causes of these postoperative inflammations is to be found in either of these theories, such sequelæ should not follow delivery in the capsule, and experience shows that delivery in the capsule furnishes a high degree of immunity from them. The combined operation, in the hands of the best operators of this and other countries in 1,032 operations, according to Ring, furnished a loss of vitreous in 7.23 per cent., iritis in 13.15 per cent., incarceration of iris in 4.32 per cent., and discission was required in 26.61 per cent.[7] According to Smith's statistics three years ago, in 2,616 operations he only had 6.8 per cent. of loss of vitreous and 0.3 per cent. of iritis in 2,494 operations when the lens came

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Arch. Ophth., June, 1906.

[2] Ophthalmology, January, 1907.

[3] In connection with this statement the following articles will be found of interest: Capsular Complications After Cataract Operations, Brit. Med. Jour., 1905, p. 433; Knapp: The Lens Capsule in the Operation of Cataract, Tr. Am. Acad. Ophth. and Oto-Laryngol., 1905, p. 4.

[4] Arch. Ophth., xii, 98.

[5] Wooten, in Claiborne's Cataract Symposium, p. 163-164.

[6] Stricken: Innutrition of the Lens in its Relation to Cataract Formation, Ann. Ophth., viii, No. 4.

[7] Med. Rec., Feb. 23, 1905.

away whole, but when the capsule was opened intentionally or ruptured in delivery, and had to be left behind, iritis was observed in 5 per cent. of the cases.[8] Dr. Arnold Knapp, after a visit to Major Smith's clinic at Jullundur in 1906,[9] practically confirmed these statistics. We must, therefore, accept these percentages and seek their explanation in the marvelous skill of the operator and the comparatively early age at which cataracts develop in India. Cases of cataract, I understand, develop in persons between five and ten years younger in India than in this country. The degenerative changes of the vitreous are more marked in the ten years between sixty and seventy than at any prior period, and the condition of the vitreous is the essential all-important element which influences statistics as to its loss, the shape of the pupil, iris entanglements, etc., in the operation.

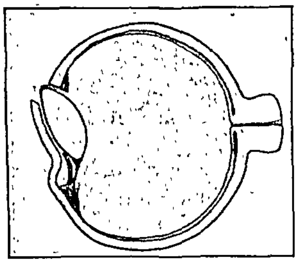
Fig. 1.

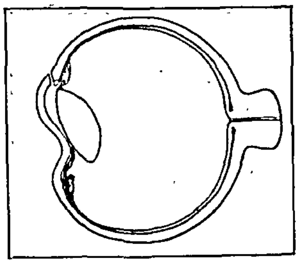
Fig. 2.

Fig. 1.—These figures are a schematic representation of the accouchement of the lens in its capsule. Fig. 1 shows the indentation of the cornea and zonula below and the slight protrusion of the lens above.

Fig. 2.—Rupture of the zonula below and lens dropping back.

Attention is called to the fact that the average age of my patients has been high (67.7 years). Largely because of this I think my percentage of vitreous loss has been high also. In making these later operations I had the advantage of having seen Smith perform it; I have learned by experience that the percentage of success depends more on the attainment of a high degree of skill, technical knowledge and the imitative faculty than on any skill acquired in making the regular operation. Theoretical considerations avail little or nothing in considering its place among cataract operations. The operation can be learned only at the elbow of one who is capable of demonstrating it. Without having this advantage and experience in the after-treatment of cases, no one is capable of passing judgment on the merits or demerits of the operation.

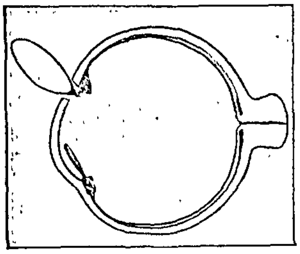
Fig. 5.—Lens almost delivered.

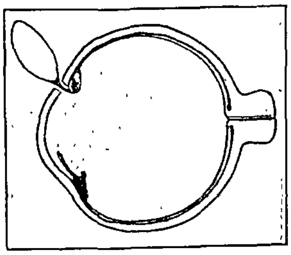
Fig. 6.

Fig. 6.—Lens is wholly out but is held by some of the superior fibers of the zonula. These fibers are torn by a slight lateral rocking motion of the lens produced by the use of the hook. The lens is now delivered in its capsule.

In July of last year, through the courtesy of Dr. Arnold Knapp, I saw Major Smith make three operations in New York City. So large a crowd was present that my view of the operations was not satisfactory, but I afterward spent several hours with him listening to descriptions of his method and seeing him demonstrate it until I thought I had a fair understanding of his technic. Major Smith regards the operation as in process of evolution. I quote from a late letter: "When once we have convinced ourselves that we are right, and have the doggedness to go ahead, our ultimate success is assured." Again he says: "You can not teach a man to do this operation by mere demonstration. He must do the operation before the teacher sufficiently often to acquire confidence in himself; and, further, a trained assistant who can properly expose the eye and at the same time take off all pressure is scarcely less important to the success of the operation than the operator himself." In this connection his address[10] before the American Ophthalmological Society at New London, Conn., last July, should be read. After describing the operation, he says:

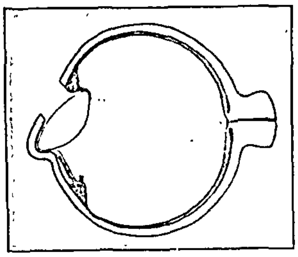
Fig. 3.

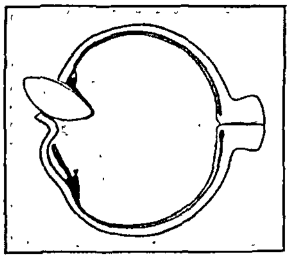
Fig. 4.

Fig. 3.—Lens is beginning to turn. The hook alone is used now and follows up the lens.

Fig. 4.—The lens has turned and is partially delivered.

> The treatment of immature cataracts which I have practiced extensively, and which I am an ardent advocate of, which I regard as the operation of the future, which will leave senile cataract a much rarer condition than at present, is extraction of the lens in the capsule, a procedure to which immature cataracts are admirably suited. *I hold that, if for no other reason than for the treatment of immature cataract, every ophthalmic surgeon should be familiar with the art of extracting the cataractous lens in its capsule.*

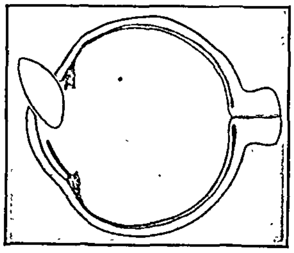
Fig. 7.—Shows the delivery of the lens in the capsule when the superior fibers of the zonula give way at the same time that the inferior fibers do. This occurs in 15 to 20 per cent. of all cases. It is in these cases that the loss of vitreous is most frequent, and that the spoon is sometimes inserted in the wound above to aid in the delivery.

I submit with diffidence that three years ago I called attention to these same points in the treatment of immature cataract,[11] and further experience has confirmed my belief that the method is superior to any other method of extracting such cataracts, or to any method of artificial ripening. It is in the treatment of immature cataract that I think the Smith operation will receive its first recognition, because, if I understand the opinion of the profession on this point, it is not favorable to extracting unripe cataracts by regular methods. Major Smith has told me that just this line of reasoning and observation with capsulotomy methods and secondary operations and accidental deliveries in the capsule are what led him to seek a method of delivering all kinds of cataracts, which would at the same time remove the capsule with the lens, because he believes such disposition of it to be good surgery.

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[8] Arch. Ophth., xxxiv, 601.

[9] Arch. Ophth., January, 1908.

[10] Tr. Am. Ophthal. Soc., 1908; Arch. Ophth., November, 1908

[11] Ophthalmology, January, 1907.

While writers from the time of Pagenstecher to the present have considered hypermature cataracts specially suited for removal in the capsule, my experience has been that these are usually the most difficult to express. The vitreous is often fluid, the strength of the zonula, while usually frail, can not be foretold, and the milky cortex will be forced by the pressure to occupy one end of the capsular bag and the small disc-like nucleus will float to the other. I have seen this hour-glass appearance several times. These are the cases which require careful handling, since they furnish a high percentage of loss of vitreous, but the same would be true if extractions were done by regular methods. In this connection we should remember that cataractous eyes are always diseased eyes, as Risley and others have so well shown. While it is my desire to discuss the operation from my personal experience, I recognize the difficulty of placing my experience, which is limited, but, on the whole, *is favorable to the Smith operation,* in opposition to the theoretical considerations which have influenced men against delivery in the capsule, and for comparison with the vast number of reports of regular operations and published statistics by innumerable observers there are no extensive statistics of delivery in the capsule available. The fact that possibly but one operation in the capsule to five thousand or more by capsulotomy methods has been made, ought not, *per se,* to prejudice men against accepting a new procedure which, to say the least, is theoretically desirable, because from the beginning the desire of the profession has been for a method which would remove the capsule with the lens. All have recognized the undesirability of leaving it behind and the surgical incompleteness of all operations which do so. Witness the early efforts of Richter and Beer, the later efforts of Sperino and de Wecker, and the still later method of Pagenstecher and Macnamara to accomplish this end. Loss of vitreous, as a rule, in my experience, has been more the fault of the patient than of the operation. This statement does not help the matter, but it puts the blame where it usually belongs.

The fear of retinal detachment from loss of vitreous seems to be the *bête noir* of all men with whom I have discussed the operation, yet this danger is not supported by the available statistics, and it really seems to be very small. Pagenstecher more than forty years ago, in 600 operations, saw only one case of detachment of the retina, and that in a highly myopic eye with chorioiditis. Wetzel and Beer long ago stated that they had not seen harm resulting from a loss of one-third of the vitreous (by volume). Smith has stated that in his experience the same is true. Captain Lister of the Indian Medical Service, a former pupil of Major Smith's, has examined 100 cases of from one to seven years after loss of vitreous. He read a report at the Bombay Medical Congress in February; his conclusions have not yet been published, but Smith has stated that Lister did not find a case of detachment of the retina among them. It must, however, be admitted in this connection that loss of vitreous is looked on by the majority of men in this country with apprehension. Whether they overestimated its importance or not, time and observation alone can tell. I myself have seen only two cases in which vision following the operation merely equaled perception of light, which could be attributed to detachment of the retina after the loss of about one-half of the vitreous. In these cases there was delayed healing, gaping of the wound and an ingrowth of corneal epithelium, and reduction in size of the cornea in healing, so that no view of the fundus could be had. I have not been certain as to the cause of loss of vision in these cases because P. L. remained. Several times after a slight loss of vitreous I have smoothed out the iris and have seen many cases in which it would be impossible to tell that the lens had been removed in the capsule. On the other hand, in a few instances I have bandaged up an eye with a keyhole pupil and have found the wound open, vitreous presenting and the iris entangled in the angles at the first dressing. The same condition is observed after the regular operations. These conditions are usually observed in nervous and restless patients with high blood pressure.

Loss of vitreous should not be the sole measure by which the operation is judged; if it is as serious as many think, the danger is yet to be proved. The statistics we have do not prove the danger to be great, and Smith's statistics show that with select cases it is possible to reduce it to the percentage of the regular operation or even below it. Surely comparative freedom from inflammation and high-class visual results count for more than slight loss.

Perhaps of more importance to the future integrity of the eye than loss of vitreous is the fact that no discission is necessary. It requires no argument to show that the risk of an operation increases in proportion to the number of times a knife-needle or scissors are passed into the eye. This is also one of the essential points on which those favorable to the Smith operation based their contention, *that it is both safer and more complete than the regular operation,* even if the loss of vitreous is greater for the average operator, *which must be conceded.* This liability to accident seems more than offset by the comparative infrequency of the reactions that are liable to follow a discission. Having had a large experience with extraction and after-treatment with capsulotomy methods, I have not seen such smooth and uncomplicated healing, all things being equal, in any other series of cases; there can be no question as to the correctness of this observation, and it is in harmony with the experience of all who are familiar with delivery within the capsule. On this point I do not wish to be misunderstood. I have encountered certain reactions, but they have not been of an inflammatory character (except in the few cases shown in the statistics), but have been connected with the healing of the section and have usually been associated with ruptures of the capsule, incarceration of iris, or cystoid healing, and blood pressure above 160 mm. Hg. in nervous and restless patients. Only two cases of iritis sufficient to cause pain and require treatment have been observed. Both followed rupture of the capsule. A few times I have observed the intrusion of a bead of vitreous into the section at the first dressing, or even later when none had presented at the time of operation. It has not been sufficient as a rule to abscise it because more will take its place, but I have always secured firm union by repeatedly tapping the chamber below, and the same practice has been successful in cystoid healing after excising the cyst.

My experience with the operation has been largely with patients of advanced years in my clinic at the National Military Home, at St. Elizabeth's Hospital, this city (and in private practice) in whom the conditions of the vitreous and fundus are frequently unfavorable to high-class results.

I pass rapidly over the corneal incision, which should be an enlarged de Wecker without a corneal flap. I have tried making a large iridectomy, and have found it to have some advantages in the delivery of the lens, but, on the other hand, as the tendency is in the direction of too large a pupil, I have made a small iridectomy as a rule. The patient can look down during the completion of the section and the iridectomy, but during the expression of the lens must look straight ahead or slightly upward, *never downward.* I have seen more loss of vitreous from the patient violating this injunction than from any other cause.

Smith's late manipulation with the end of the spatula and strabismus hook, over the lower third of the lens, by which it is dislocated, has been the most difficult step to imitate. I am conscious that failure to make this manipulation properly has been the weak point in my technic, and has materially increased my percentage of vitreous loss. I have dispensed entirely with the speculum while making the section and the iridectomy and have had my assistants use the Fisher and later the Noyes lid-elevator instead. The assistant changes to the large hook after the iridectomy, and lifts the upper lid as Smith has directed. The operator should make light or moderate pressure to and fro over the lower third of the lens with the tip of the strabismus hook. At this stage the operator will see the lower border of the lens mapped out through the cornea and iris advanced slightly, then with moderate pressure with the small end of the spatula applied edgewise across the lower sclerocorneal border the lens will advance still farther toward the incision, the zonula will give way, and the top of the lens will often tilt slightly backward. If the pressure is continued around the lower border of the lens, and the tip of the hook inserted under or behind it, the intraocular pressure will aid in causing the lens, which is now only anchored above, to describe a half-circle. The wound will gape, and the lens will emerge bottom edge upward, leaving only a small band of zonula to be loosened. This must be done slowly and with the utmost gentleness by drawing it back and forth through the incision. Otherwise the capsule will rupture and recede into the eye. It is still possible to catch it with forceps if the operator be dextrous. Vitreous is seldom lost when the lens is delivered in this way. In more than half of these cases the lens has been delivered thus. In other cases the zonula will rupture first at one of the angles of the section; then if the vitreous is fluid some of it is easily lost. It is at this point that familiarity with what may happen and skill and technic in meeting the emergency obviates some mishaps.

Before leaving these steps in operation I wish to call attention to the perfect control the assistant has over the orbicularis with the large strabismus hook under the upper lid. Slight traction with it will break the power of the muscle by bending it at a sharp angle. With a small piece of gauze on the face of his thumb the assistant pulls down the lower lid. With a trained assistant it is practically impossible for the patient to squeeze out normal vitreous. Unfortunately not all patients have normal vitreous and it is easy for the patient to lose fluid vitreous not only by attempts at squeezing but by suddenly and forcibly looking down. So far as I am able to learn, the particular design of this large hook, and the use to which it is put, the control of the lower lid in the way described and the use of the smaller hook for delivering the lens, must be credited to Major Smith. To his credit also, I think, belong the manipulation in emergencies with the double-ended spatula, one end of which is passed through the vitreous presenting behind the lens. It should not be passed deeper than the posterior pole of the lens, while pressure through the cornea below will cause the lens in its capsule to glide up this inclined plane to its exit. In my judgment these three instruments are the best additions that have been made to the armamentarium of the ophthalmic surgeon in many years. Since I have been making more pressure with the tip of the spatula and done less rubbing over the lower third of the lens the number of cases of striped and latticed keratitis have markedly diminished, and I have not seen either remain and lower vision in any of these cases. I never use bichlorid solution in cataract operations; therefore it could not be responsible for the keratitis. There are no rules governing the amount of pressure to be used in delivering the lens. Each case is a law unto itself. Three points should be remembered: 1. The pressure should never be excessive, but steady and equal. 2. The cornea should be kept moist. 3. There should be no pressure or rubbing over the center of the cornea.

It is in connection with these manipulations that men become prejudiced against the operation when they see it performed for the first time, because they overestimate the force of the steady pressure required to rupture the zonula and dislocate the lens, and consider the manipulations rough and unscientific. I have satisfied several who have visited my clinics that the degree of pressure used is not great, but is much more apparent than real. In other words, they have unlearned some of their misconceptions regarding this important step of the operation.

The lens having been delivered, the iris, if prolapsed, should be returned and smoothed out, but the danger of loss of vitreous should not be forgotten in doing this. Usually it is best to bandage the eye as soon as possible. Intrusion of fluid vitreous into the wound has not influenced the healing materially. The toilet should be made according to the taste of the operator. I prefer a half-round dry cotton patch between layers of gauze laid on the closed lids of each eye. The irregularities are filled out with small pledgets of picked cotton which are held in place by pieces of adhesive straps. I prefer a flannel bandage for the class of patients on whom most of my operations have been performed—old soldiers, many of them feeble in mind and body, bad subjects, as a rule, for any operation. The eye should not be open for three or four days unless the patient complains of pain, which is so exceedingly rare that freedom from discomfort or pain can be regarded as one of the striking characteristics of the method. On removing the dressing freedom from discharge and the normal appearance of the eyelid are usually noticeable. As a rule, the wound will be found closed and the chamber established at this first dressing; if not closed the usual conditions will be found present. The appearance of the clear black pupil is very gratifying and the distinct tracery and pattern of the iris, and its response to atropin, if used, shows its freedom from inflammation. The conjunctiva usually takes on a blush of irritation or congestion. Rarely will the deep redness and chemosis of inflammation be seen. The amount of photophobia and lachrymation will vary with the condition of the wound. I have seen only two cases of genuine iritis in these seventy-five cases. In each the capsule had ruptured and only two scissors operations have been made for up-drawn pupils in these same cases. Striped and latticed keratitis have caused more uneasiness and required more treatment than any other complication, yet, as already stated, I have not seen either remain and lower vision in any of these cases, and the same can be said of disturbance in the epithelial layer of the cornea from the pressure.

As a rule vision is not high at first, because of ker-

Table of Results of Smith Operation in 75 Cases

No.	Age.	Eye.	Condition of Cataract.	B. P.	Lens Delivered.	Capsule.	Vitreous Loss.	Iris.	Chamber Formed.	Vision.	Remarks.
1	73	L.	Im.	140/100					3d day.	20/20	
2	71	R.	M.	190					14th d..	20/30	Presenting vitreous; tenth day passed knife through wound; firm union.
3	61	L.	M.	190					3d day.	20/20	
4	60	L.	M.	210/130		Ruptured, retained.		Iritis.	14th d..	20/20	Discission.
5	75	R.	Hm.	160/120					3d day.	20/20	
6	68	R.	Im.	190/120					4th d..	20/30	
7	49	R.	M.	120/100					2d day.	20/15	
8	76	R.	M.	200/130					3d day.	20/20	Wound opened after 1 week. T = + 1: chamber formed next day.
9	60	L.	M.	190/130	Spatula..		Slight		4th d..	20/70	
10	65	L.	Hm.	165/130		Ruptured..			3d day.	20/50	
11	70	L.	M.	190/140					14th d..	20/30	protruded 3d day; seven punctures made; firm union.
12	75	R.	Im.	210/160					2d day.	20/70	Feeble minded; delusions; vision partly estimated.
13	58	R.	Im.	180/140			Slight..		3d day.	20/50	Incipient chorioiditis.
14	56	R.	Im.	145/110					5th d..	20/30	
15	67	L.	M.	180/130					3d day.	20/20	
16	60	R.	Hm.	190/130	Spatula..		Slight..		4th d..	20/70	Myopia and chorioiditis.
17	45	R.	M.	140/100					2d day.	20/30	
18	61	R.	M.	190					3d day.	20/20	
19	76	L.	M.	200/130					3d day.	20/20	
20	50	R.	Im.	136					5th d..	20/15	
21	72	L.	M.	115/75					4th d..	20/.0	
22	76	L.	Im.	250/175					4th d..	20/40	Slight keratitis cleared up; incipient chorioido-retinitis.
23	71	R.	Im.	140/90					3d day.	20/20	
24	63	L.	M.	190/115			Slight..		12th d.	20/20	Delayed healing; no cause apparent.
25	62	L.	M.	170/130					5th d..	20/20	
26	62	R.	Im.	165/130					5th d..	20/20	
27	65	R.	M.	180/130			Slight..		3d day.	20/20	Small hemorrhage into anterior chamber.
28	75	L.	M.						2d day.	20/20	
29	64	L.	M.						4th d..	20/20	
30	70	R.	M.						2d day.	20/20	
31	62	L.	M.						4th d..	20/20	
32	68	L.	M.						3d day.	20/50	Oct. 20, '08, iridotomy; Jan. 29, '09, iridotomy.
						retained.					
33	64	L.	M.	160/120			Considerable..	Incarcerated..	14th d.	20/30	Pterygium, cystoid healing, abscised: healed.
34	87	R.	M.	180/140	Spatula..		Marked		3d day.	20/50	Feeble mentality; vision partly estimated.
35	77	R.	M.	140/90					3d day.	20/30	
36	77	L.	M.	230/150					3d day.	20/20	
37	70	R.	M.	170/130					4th d..	20/40	Feeble mentality (complained of pain during convalescence.)
38	70	L	M.	170/130				Incarcerated..	14th d.	20/50	Feeble mentality; vision partly estimated.
39	65	R.	M.	160/110					4th d..	20/30	
40	68	L.	M.	140/110					4th d..	20/40	
41	76	L.	M.	150/100					2d day.	20/30	Delayed healing; a bead of vitreous abscised on fifth day Prompt healing.
42	76	R.	Im.	150/100					5th d..	20/50	
43	77	R.	M.	160/110					4th d..	20/30	
44	73	L.	M.	22[illegible]/160					3d day.	20/20	
45	73	R.	M.	220/160	Spatula..		Excessive..			P. L.	Restless; unruly; fluid vitreous.
46	77	R.	M.	230/150					4th d..	20/20	
47	87	L.	M.	180/140				Incarcerated..	17th d.	20/30	Feeble mentality.
48	64	R.	M.	160/120			Slight..		4th d..	20/30	
49	71	R.	M.	200/140					5th d..	20/20	
50	66	L.	M.	150/110			Slight..		7th d.	20/20	
51	75	R.	M.	1[illegible]0/110					4th d..	20/20	
52	73	L.	M.	100/120				Incarcerated..	19th d.	20/30	
53	69	L.	M.	150/120	Spatula..				3d day	20/20	
54	74	R.	M.	170/120					2d day.	20/20	
55	66	L.	M.	210/140					7th d..	20/20	
56	66	R.	Im.	210/140					2d day.	20/20	
57	86	R.	M.	170/130					7th d..	20.50	Feeble-minded.
58	74	L.	M.	210/150					3d day.	20/50	
59	63	R.	M.	220/140					7th d..	20/20	
60	61	L.	Im.	1[illegible]5/110	Spatula..				7th d..	20/30	
61	67	L.	M.	160/120					14th d.	20/40	
62	72	R.	M.	190/140					3d day.	20/30	
63	72	L.	Im.	190/140					3d day.	20/30	
64	67	R.	M.	200/150	Spatula..				3d day.	20/30	
65	63	R.	M.	150/120			Slight..		5th d..	20/30	Slight keratitis cleared: very unruly
66	53	L.	Im.	140/100					10th day	20/15	
67	81	R.	Im.						3d day.	20/70	Striped keratitis. Cleared up.
68	73	L.	Im.						4th d..	20/20	
69	67	R.	M.						3d day.	20/20	Slight keratitis cleared up.
70	76	R.	M.	[illegible]					3d day.	20/40	Unruly; vitreous escape after delivery.
71	70	L.	Hm.	140/120					3d day.	20/70	
72	74	R.							3d day.	20/50	Incipient macular chorioiditis.
73	70	R.	M.						3d day.		
74	88	R.	M.								Infection; panophthalmitis (chronic cystitis.)
75	66	L.	M.	150/110			½		7th d..	P. L.	Very unr[illegible] t solution injecte[illegible] lap; probable h[illegible]

atitis in some cases, but more often from disturbance in the anterior layers of the vitreous which resemble miniature ridges and valleys, running perpendicularly. These have not the appearance of striped keratitis. Pagenstecher noted this condition.[12] They seem to smooth down gradually and vision reaches its best in from one to two months. The degree of astigmatism, which is usually from 2 to 4 D., has not varied much with the healing, when primary union has taken place.

For the purpose of comparing the results obtained with the combined method of extraction, I have appended the statistics of the last 75 operations in the Soldiers' Home Hospital, with the statistics of 75 cases in which operation was done by the Smith method; 52 of them in the Soldiers' Home Hospital and 23 in St. Elizabeth's Hospital. The conditions have been as uniform as possible. The average age of the patients operated on by the regular method was 69.76, and for the Smith operation 67.7 years. The number of patients operated on by each method is too small to draw any definite conclusions from, yet they are believed to have sufficient value to justify comparing them.

Expression within the capsule offers the following advantages:

1. A cataract can be removed at any stage.
2. No discission is ever necessary.
3. There is comparative freedom from postoperative inflammations.
4. There are no capsule entanglements; prompt healing is the rule.
5. The method is especially adapted to institutional work; one operation does all.
6. No ripening methods need be tried.
7. The result is better average vision, which does not change with time, if the fundus conditions remain favorable.

The disadvantages of the method are the following:

1. The only important one is greater liability to loss of vitreous for the average operator.
2. From a cosmetic point of view the wide updrawn pupil (if it results) mars the appearance of the eye, while it may not be a disadvantage to vision.
3. And lastly, a skilled assistant is always necessary in performing the operation.

It is not my desire to be considered a champion of the Smith operation until I have seen more of the ultimate results which follow it, among white people, living under different climatic and dietetic conditions than average Indians, but having emphasized its strong points, and admitted its weak points as I have seen them, I can not avoid the conclusion that it is a long step toward the ideal operation which we are all seeking. Perhaps it will not be so in the hands of every one, but in the hands of the few who will learn to do it well I believe it has a promising future. The statistics which follow have been compiled by my hospital associate, Dr. J. W. Millette. It is a pleasure to acknowledge the thorough and careful manner with which it has been done.

These statistics do not include all the operations I have performed. Cases have not been selected, but I have excluded all cases in which I have not given the after-treatment and done the testing for vision and also those cases which from the condition of the cornea, vitreous and fundus, were not proper ones from a visual point of view. Two patients whose cases were considered proper had excessive loss of vitreous and vision only equal to P.L., which are fairly chargeable to the operation; one has dense vitreous opacities, probably from hemorrhage, the other lost about half of the vitreous. He has an up-drawn pupil, and no view of the fundus can be had. I am not certain as to the cause of the loss of vision in either case, and one other case was lost from infection.

Summary of Visual Results

Total Number.

Cases.	Vision.
3	20/15
30	20/20
18	20/30
4	20/40
9	20/50
5	20/70
2	P. L.
1	0
3	No record
75	

With Loss of Vitreous.

Cases.	Vision.
4	20/20
2	20/30
3	20/50
2	20/70
2	P. L.
13	

With Rupture of Capsule.

Cases.	Vision.
1	20/20
3	20/50
4	

Average vision for 72 better than 20/30 about 20/27, to be exact.

Summary of Accidents and Blood Pressure

Vitreous loss; healing delayed more than five days.

Cases.	B. P.
3	150
2	160
3	180
3	190
1	200
1	220
13 Average B. P.	175.4

Cases.	B. P.
2	150
2	160
2	170
1	180
1	185
3	190
2	210
1	230
14 Average B. P.	174.6

For comparison, with results obtained by the Smith operation, I submit the following statistics from my last seventy-five regular operations compiled by my assistant, Dr. W. C. Cook, National Military Home:

Cases.	Vision.
10	20/20
16	20/30
17	20/40
10	20/50
5	20/60
2	20/70
7	20/100
5	20/200
1	Fingers at 6 feet
1	P. L.
1	0
75 Average vision	20/40

One patient had slight loss of vitreous; 2 had slight attacks of glaucoma; 20 had a degree of iritis requiring treatment; 35 eyes required discission; 9 patients whose eyes needed discission refused it; 1 eye was lost by iridopyelitis after a secondary operation.

THE EXPRESSION OF CATARACT IN ITS CAPSULE

WITH REPORT OF FORTY OPERATIONS *

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Delivery of the lens in its capsule has been an occasional accidental accompaniment of the cataract operation experienced by most operators ever since the beginning of cataract extraction, by reason of unwonted pressure on the globe by the operator or by the patient squeezing his lids (Case 10), during which more or less vitreous has been lost. It may also be occasioned knowingly, though unwillingly, by reason of rupture of the zonula after incision of the cornea when the operator has passed a spoon behind the lens lifting it out, or when he has premeditatedly removed a dislocated lens by the same means. Over-ripe and Morgagnian cataracts have occasionally likewise been removed by much the same procedure. Those of us who have been operating for a score of years will doubtless remember many such experiences and our surprise at the unusually good visual results obtained even in some instances in which considerable vitreous was lost. The deliberate routine extraction of all senile cataracts in their capsules was first introduced by A. Pagenstecher (September, 1865) at the Heidelberg Ophthalmological Congress and has been followed since that time by him and his brother, H. Pagenstecher[1] in a large proportion of their cataract operations.

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[12] Ann. d'ocul., September-October, 1871.

* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Nach dem Drittelbogenschitt nach oben mit Bindehautlappen wird iridectomiert und hierauf die Linse, entweder durch das blosse Druckmanöver oder mit dem flachen Löffel der bloss als gleitfläche dient, entbunden.[2]

The lens is expelled after incision of about one-third of the circumference made with a conjunctival flap and an upward iridectomy, either by means of gentle pressure or with the flat spoon acting purely as a gliding surface.

The above description of Pagenstecher's operation on cataract in the unopened capsule is as short and accurate as has yet been given. Examine these words closely, the various essays of Pagenstecher, digest them, then follow up by reading the essays of subsequent writers as Cassiani,[3] Gradenigo,[4] Gayet,[5] Landesberg,[6] and other foreign authors, Roosa,[7] Andrew,[8] Henry Smith,[9] Oxley,[10] Maynard,[11] Herbert,[12] Cheney[13] and Greene,[14] then come back to the original of Pagenstecher and give credit for the devising of this operation in all its details where it belongs, not to later operators, even though of astounding skill, sufficiency and experience.

The recent revival from the antipodes has awakened new interest in this operation, largely occasioned by the astounding number of cases reported by Major Smith, of Jullundur, India, who has had an experience of about 20,000 operations, about 17,000 being in the capsule, among them many incipient cataracts.[9] While this vast experience has authoritatively established expression as successfully applied to the removal of senile cataract, yet the method should not be denominated "Smith's operation," even though he claims "the details of the operation are my own"[9] and has been accorded these claims in some quarters. In common with Major Herbert, I fail to see any substantial reason for such claims. "The operation is merely ordinary combined extraction, with the omission of one step—the opening of the capsule" (Herbert).[12] Smith insists that men must see it done in order to learn the method completely. By examination of the literature we "find no detail which has not been practiced earlier by others." "Those who have seen Smith operate do not appear to have benefited much, judging from their results" (Herbert).[12] I have not yet had the opportunity of seeing this master hand at work, but his writings certainly do not give us anything beyond the "omission of detail" (Herbert).[12]

I find nothing original except the use of the large squint hook for delivery of the lens, a minor and useful adjunct, but one which I have myself used since 1888, and probably many others have used a similar instrument for this purpose. A. and H. Pagenstecher have used a curved spoon since 1865. The large old-fashioned rounded strabismus hook is a perfectly adapted instrument for this purpose—its convexity indents the cornea properly and its concavity follows up the cataract until delivery through the open wound is completed, with much less force than by finger pressure through the lid, with more dexterity than by use of the Pagenstecher spoon, and with much less danger of bursting the hyaloid membrane and consequent prolapse of vitreous.

Until I got the Smith hook I used a crochet hook which I devised in 1889 (but never reported) for ocular muscle operations. Last year (1908) I devised a large hook with a blunt crochet end. The latter is useful just as the lens is being delivered, to lift it out of the wound. Smith's new spoon is very like the old spoon of Pagenstecher; comparison of the two will not show any appreciable difference. In common with others I believed for many years that the insertion of the spoon behind the lens or into the vitreous back of the hyaloid membrane was the distinguishing mark of the Pagenstecher operation; but on referring to the original author and in correspondence with German writers I now fully agree with Elschnig (editor of Czermak's *Augenärztlichen Operationen*) in his letter to me of Feb. 1, 1909, in which he says: "Pagenstecher's operation is quite the same as Smith's."

Pagenstecher seems to have been the first to express the lens by external pressure (1871[1]) and Terson (1872[15]) and Wolkow (1894[16]) next report such procedure. Smith does not write until 1900.[9] Pagenstecher used his spoon to press the posterior lip of the wound back and to slide the lens thereupon. Smith[9] now passes the spoon behind the edge of the lens to assist its birth or extrusion, passing it into the vitreous on occasion of a hard delivery. So did A. and H. Pagenstecher and so did all of us.

The modifications of the Pagenstecher operation have varied from bizarre changes in place of section (Macnamara, outward, 1871[17]), introduction of spoon, hook

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1. Pagenstecher, H.: Extraction de la cataracte sans ouverture de la capsule, Ann. d'ocul., 1871, lxvi, 126; Zur pathologischen Anatomie des Glaskörpers, Zentralbl. f. d. med. Wissensch., 1875, p 708; Die Extraktion des grauen Staars in der geschlossenen Kapsel, Wiesbaden, 1877; Ueber Extraktion der Katarakte in der geschlossenen Kapsel, nebst Bericht über 117 Fälle, Arch. f. Augenh., 1881, x, 166; Ueber Staarextraktion mit ohne
sel, Arch. f. Ophth., 1888, xxxiv, 145; Uebe
tion in der geschlossenen Kapsel, Ber. d. VII
zu Heidelberg, 1888, 506.

2. Czermak, edited by Elschnig, A.: Augenärtzlichen Operationen, 1908, ii, 524 et seq.

3. Cassiani, Ingoni: Dell' estrazione capsulo-lenticolare della cataratta, Ann. di ottal. 1897, p. 460.

4. Gradenigo: Estrazione di cataratta capsulo-lenticolare perisceleram, Ann. di ottal., e lavori d. clin. ocul. di Napoli, 1902, xxxi, 702; De l'extraction de la cataracte dans la capsule par la sclérotique après zonulotomie, Ann. d'ocul., 1903, cxxx, 25.

5. Gayet: Rapport sur l'opération de la cataracte, Ber. d. VII. Internat. ophth. Kong. zu Heidelberg, 1888, p. 108.

6. Landesberg: Ber. über 123 Staaroperationen, Arch. f. Ophth., 1878, xxiv, 59.

7. Roosa: Remarks on the Extraction of the Crystalline Lens in its Capsule, Tr. Am. Jour. Ophth., 1885, ii.

8. Andrew: The Operation of Senile Cataract in its Capsule, Brit. Med. Jour., January, 1883, p. 41.

9. Smith, Henry: Indian Med. Gaz., June, 1900; Extraction of Cataract in the Capsule, Brit. Med. Jour., Sept. 26, 1903; Extraction of Cataract in the Capsule, Arch. Ophth., 1905, xxxiv, No. 6; Arch. of Ophth., March and May, 1906; Treatment of Immature Cataract, Arch. Ophth., November, 1908.

10. Oxley: Cataract Extraction in the Capsule, Indian Med. Gaz., December, 1905.

11. Maynard: Cataract Expression in the Capsule (Smith Operation), Ophth. Rev., 1906, p. 225; Manual of Ophthalmic Operations, 1908, pp. 106 et seq.

12. Herbert: Extraction of the Lens in the Capsule, Ophthalmo scope, 1906, p. 113; Text-Book of Cataract Extraction, 1908.

13. Cheney: Extraction of Cataract in the Capsule: Report of Ten Cases, Ophthalmology, October, 1906, iii, No. 1.

14. Greene: Extraction of the Cataract within the Capsule, Ophthalmology, January, 1907, iii, No. 2; Visual Results After Cataract Extraction, Ohio State Med. Jour., Sept. 15, 1906; Further Experience with the Smith-Indian Operation in the Extraction of Cataracts, Ophth. Rec., October, 1908; Tr. Sec. on Ophth. A. M. A., 1909.

15. Terson: De l'extraction du cristallin et de sa capsule, Rev. méd. de Toulouse, 1872, Nos. 3 and 4; Ann. d'ocul., lxvii, p. 313.

16. Wolkow: Ist die Kapsulotomie bei der Extraktion des Altersstaars nötige? Vestnik oftalmol., 1894, xi, 366.

17. Macnamara: A Manual of the Diseases of the Eye, 1871, ed. 11.

or loop (Caspar, 1878[18] Higgens 1888[19]), tearing of zonula (Andrew, 1883[8]), dislocation of lens into anterior chamber by sclerotic puncture, Canstatt (1870[20]), Roosa (1885[7]) tore the zonule by partly dislocating the lens with the Graefe knife, Gradenigo (1895[4]) used a zonulotome, Wolkow (1894[16]) used two spoons for pressure and counter-pressure, etc. Mulroney, at Amritsar, India, began in 1890 to make a downward section without iridectomy, and this procedure has been adopted by Smith[9] (with upward corneal section), "who now has many imitators."[12]

We will now take up the operation itself according to my experience, leaving other phases and details to our confrère, Dr. Greene.

I do not deem the purely corneal section acceptable, for this is followed by slow healing, iridic prolapse (Herbert[12]), distorted pupils (Greene, 1906[14]) and excessive astigmatism, neither is the operation without iridectomy, on account of iridic prolapse. My experience has shown the 2/5 sclerocorneal section with conjunctival flap, as where this is made delayed union is unknown (Maynard[11]), combined with a very small iridectomy and extraction of the lens, *i. e.*, the regular operation less a capsulotomy, in immature and hypermature cataracts, is the only all-round satisfactory operation. The ordinary run of mature cataracts may be as well operated on with less risk in the average hands by the generally adopted combined flap extraction with capsulotomy; cataract in children and traumatic cataracts by discission.

The "absence of details," *i. e.*, the least handling of the eye and the fewest instruments possible, is the characteristic of this operation and what with the *tactus eruditus* makes it successful in the hands of Smith, Greene and others; while in some other hands—notably the critics of the method—especially those of India—"do not appear to have benefited much, judging from their results."[12] It is no operation for a beginner, neither is it for the average operator.

A stop speculum should not be used on account of the ever-present danger of vitreal prolapse. The lifting of the upper lid by a squint hook seems crude. I use the lidholder of William Fisher, of Chicago, and have the patient's upper lid—the only one of moment—under full control, and thus lose vitreous in not more than 5 per cent. of cases either with or without capsulotomy. The eye is fixed by catch forceps, the knife is entered (the only instrument entering the eye), and a corneoscleral section with a conjunctival flap is made. A very small iridectomy is made, the section of the iris only embracing the pupillary margin and edge of the sphincter muscle, by pressing the ends of iris forceps on the cornea over the upper part of the pupil, when the iris will usually prolapse, the edge being seized by the forceps, the iridectomy is completed by a single cut of the scissors. The bend of a large hook is then pressed moderately, slowly and continuously on the cornea at the lower edge of the lens, that tilted backward, the pressure gradually relaxing as the upper edge of the lens enters the wound, the body of the lens is lifted up by the pressure of the hook, which follows it in its delivery; the flat spoon of Pagenstecher or Smith may be used to assist the lens to slide out of the eye by offering an inclined and smooth plane for it to glide on. Seldom is the spoon entered into the eyeball; forceps are occasionally necessary to seize the lens when impacted between the lips of the wound; and the act is completed by the crochet end of the hook catching the lens, on its delivery, rotating it out of the wound, the conjunctival flap and the iris stroked back into place, the lids closed and a light bandage applied. This is a brief description of the method I have adopted and adapted. My expression cases are comparatively few, but compare very favorably, and in fact the results are to my mind better than those of about 1,000 regular extractions performed by me within the last twenty years.

My cases, grouped under dates of the expression operations, are as follows:

CASE 1.—Oct. 3, 1904: Mrs. S., aged 58. Immature cataracts R. & L. Preliminary iridectomy and direct trituration with Boettmann's spoon by me October, 1903, on L. E.; no ripening. Extraction of cataract with aid of Pagenstecher's spoon which entered the eye, no loss of vitreous. V. + 9.00 ⊃ 1.00, 180° = 6/vi.

CASE 2.—Oct. 15, 1905: Same as Case 1. I had done preliminary iridectomy without trituration on this eye in October, 1903. Normal expression operation on mature cataract of R. E. V. + 9.00 ⊃ + 1.50, 165° = 6/vi.

CASE 3.—March 12, 1906: Mr. F. D., aged 65. R. immature, L. mature. Small iridectomy, normal expression in capsule of L. V. + 12.00 ⊃ + 2.00, 90° = 6/xii. See also (12).

CASE 4.—March 9, 1907: Mrs. Z., aged 61. Hypermature black cataract, small iridectomy, expression with slight loss of vitreous, corneoconjunctival stitch after. V. + 10.00 ⊃ + 3.00, 180° = 6/xxiv.

CASE 5.—March 18, 1907: Mrs. S., aged 59. Mature cataract, small iridectomy normal expression. V. + 10.00 = 6/xii.

CASE 6.—March 23, 1907: Mrs. E. J. J., aged 60. Mature black cataract, small iridectomy, expression normal until lens was pinched in wound when a portion of the anterior capsule tore off, sticking in wound, removed by forceps without entering the eye, a slight iritis developed; the hyaloid membrane apparently participating in the opacifying process, as several months afterward a fine membranous opacity was observable on focal illumination. I have not seen this occurrence before or since. V. + 10.00 ⊃ + 150, 15° = 6/vi; but on development of the hyaloid opacity was reduced to 6/viii with correction.

CASE 7.—April 10, 1907: C. C., aged 48. Mature cataract, small iridectomy, normal expression. V. 10 days later with 10.00 about 6/xxiv. I did not have the opportunity of prescribing lenses or observing the vision later as he did not return after leaving the hospital.

CASE 8.—June 19, 1907: B. O., aged 65. Mature cataract, normal expression except capsule ruptured, lens removed by sliding on spoon and capsule pulled out of wound with forceps without entering the eye. V. + 10.00 ⊃ + 2.50, 180° 6/viii.

CASE 9.—Nov. 6, 1907: R. W., aged 45. Immature cataracts, small iridectomy, normal expression, corneal incision (the typical Indian operation), very slow healing of wound, iritis, four weeks in hospital. High astigmia followed, although visual acuity was very good. V. + 11.00 ⊃ + 4.00, 135° = 6/xviii.

CASE 10.—Nov. 11, 1907: Mrs. A. S. Hypermature cataracts with tremulous irides and synchysis vitrei. There being fair perception and iris reaction in the left, I attempted ordinary combined extraction, corneoconjunctival stitch (Kalt) placed before incision, but lens popped out in the capsule with considerable loss of vitreous. Result for a few months was V. = movements of hands and large objects. Further degeneration set in so that in May, 1908, eye was blind. (See Case 19).

CASE 11.—Nov. 12, 1907: Mrs. S., aged 70. Hypermature cataract, small iridectomy, capsule ruptured and was not entirely removed from eye on account of rupture of hyaloid with slight loss of vitreous, caused by attempt at removal by iris forceps entering the eye, conjunctival stitch. Four weeks in hospital with iritis. V. two months afterwards + 12.00 = 6/xxxvi.

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[18] Caspar: Ueber Extraktion der kataraktosen Linse in geschlossener Kapsel, Inaug. Diss., Berlin, 1878.

[19] Higgens: Extraction of Immature Cataract, Lancet, London. 1888, No. 19.

[20] Canstatt: Briefl. Mitteilung betreffend eine neue Idee sur operative Heilung des grauen Staars, Klin. Monatsbl. f. Augenh., 1870, pp. 131-133.

Case 12.—Dec. 13, 1907: Patient in Case 3 returned on account of satisfactory result on L. E.; V. then being 6/viii with old correction, increased to 6/vi + 2 with decreased cylinder. Normal expression, immature cataract, small iridectomy. V. + 12.00 ⊃ + 1.00, 90° = 6/viii.

Case 13.—Jan. 6, 1908: C. C., aged 40. Morgagnian cataract, normal expression, small iridectomy, lens aided in delivery by forceps as it became impacted into wound, no entrance of forceps. V. good. Refraction not recorded.

Case 14.—Jan. 29, 1908: C. W., aged 69. Immature cataracts both eyes. V. 6/lx and 3/lx. L. E., corneal incision, small iridectomy, normal expression except that lens came out very slowly and seemingly took considerable pressure in delivery. Striped keratitis for two weeks. Very high immediate corneal astigmia (6.00, 180°). V. + 11.00 ⊃ + 5.50, 180° = 6/xxxvi. Astigmia reduced in May, 1908, to 3.00, 180°.

Case 15.—Feb. 21, 1908: E. B., aged 58. Immature cataract, rather large iridectomy, expression followed by small bead of vitreous, conjunctival stitch. V. + 10.00 = 6/xii.

Case 16.—March 21, 1908: O. P. H., aged 75. Robust health, two years blind with mature cataracts. R. E. chronic conjunctivitis and dacryocystitis. L. E. apparently normal, no pus germs on microscopic examination, three days' bichlorid of mercury treatment to eye and Seiler's solution in nose. Small iridectomy normal expression, brown cataract. Corneal astigmia 1.50, 180° V. + 10.00 = 6/xxiv. Increased in May, 1908, to + 11.00 = 6/xii. (See Case 18).

Case 17.—May 5, 1908: Mrs. S., aged 64. Mature cataract, normal expression with rather large and uneven iridectomy. V. + 11.00 ⊃ + 1.50, 15° = 6/viii.

Case 18.—May 21, 1908: Patient in Case 16. April 1, 1908, I excised the lacrimal sac according to Meller's[21] method securing union by first intention and kept him under antiseptic treatment with bichlorid of mercury solutions locally until May 22, 1908, when I made normal expression of the right cataract with small iridectomy. V. + 10.00 = 6/xxiv.

Case 19.—May 21, 1908: Patient 10 returned with L. E. blind from degeneration, and as a last resort I made expressive operation on the R. E., which only had poor perception and projection, Morgagnian cataract, synchysis vitrei, having no complications and to my surprise getting 6/lx vision with + 10.00, but a few months later vision further deteriorated and the end results are unknown.

Case 20.—June 5, 1908: Mr. S., aged 43. Morgagnian cataract, normal expression, small iridectomy. V. + 10.00 = 6/lx.

Case 21.—June 19, 1908: Mrs. H. W., aged 61. R. mature L. immature cataracts, normal expression with small iridectomy R. except that capsule ruptured within the eye and some remained. Opacity cleared up under dionin. V. + 11.00 = 6/xxiv. (See also Case 28.)

Case 22.—June 20, 1908: Mrs. M., aged 60. R. E. blind from previous iridocyclitis following attempted extraction of cataract by another operator. L. E. poor perception and projection. L. E. Morgagnian cataract expressed aided by forceps which entered the eye, much loss of fluid vitreous. Cataract with black nucleus. No result as eye went on to iridocyclitis.

Case 23.—July 16, 1908: M. O., aged 63. Immature cataract, expression with small iridectomy, capsule ruptured before delivery, extracted with forceps entering the anterior chamber, small bead of vitreous extruded and was cut off, conjunctival stitch. V. + 10.00 ⊃ + 1.75, 180° = 6/viii.

Case 24.—July 21, 1908: N. O., aged 69, had an attempted extraction done by another surgeon in L. E. with result of incarceration of iris and partially dislocated immature cataractous lens with resultant vision of fingers at 2.00 M. As the vision of the R. E. was less than the L. E. through the lenticular opacity I attempted expression with iridectomy, but the capsule ruptured and vitreous escaped, necessitating entrance of the spoon and delivery of the lens, conjunctival stitch. Patient had postoperative mania occasioned by fear of not regaining vision, owing to his previous experience and from the fact that his brother was totally blind after an unsuccessful cataract operation by the same operator on his only remaining eye, the other being injured and blinded by an accident. Nov. 6, 1908, I made a discission of pupillary membranes securing a clear pupil with normal looking fundus; but patient declared and persisted in the statement that he could not see, becoming very childish, so he was taken home and the end-results are unknown to me.

Case 25.—July 30, 1908: Patient in Case 23 returned and I made normal expression of immature cataract with small iridectomy on left eye. V. + 10.00 ⊃ + 2.00, 180° = 6/vi.

Case 26.—Aug. 3, 1908: Mrs. M. S., aged 51. Immature cataract, normal expression with small iridectomy. V. + 10.00 ⊃ + 1.00, 180° = 6/xxx. As the other eye has yet good sight she prefers to go without this correction.

Case 27.—Aug. 6, 1908: Mr. F., aged 54. Immature cataract, normal expression with small iridectomy. V. + 12.00 ⊃ + 2.00, 15° = 6/xxxvi.

Case 28.—Sept. 2, 1908: Patient in Case 21. Expression L. with small iridectomy; fluid vitreous escaped, spoon entered eye, conjunctival stitch, hyphema, dionin. Oct. 22, 1908, discission. V. + 12.00 = 6/xxiv.

Case 29.—Sept. 18, 1908: J. R. W., aged 80. Mature cataract both eyes, very smooth normal expression with small iridectomy R. E. Clear black pupil and counting of fingers immediately after operation. Very nervous patient; two days later had postoperative mania, got his fingers under the bandage despite attention of special nurse, infected eye which was lost through panophthalmitis.

Cases 30 and 31.—Nov. 21, 1908: H. B., aged 57. Five years before this date I had extracted an immature cataract from his right eye, finding the zonula weak; the lens came out with the capsule. V. + 10.00 = 6/vi. Nov. 10, 1908, I attempted operation, but on completing sclerocorneal incision found that a bead of vitreous protruded into the anterior chamber, closed up the eye and November 21 made new incision with iridectomy; perfectly normal expression. V. + 10.00 ⊃ + 1.00, 180° = 6/viii.

Cases 32 to 37.—In addition to the above I have made six expression operations at my public clinic, the case histories of which are not complete nor at present accessible. In one of them there was loss of vitreous, in two rupture of the capsule but all recovered with useful vision.

I append three more recent case histories which apply to this subject, although they can not be classed as expression operations, in two of them the lens being removed in its capsule by the aid of the wire loop, in one of which detachment of the retina followed later, and in the other owing to the corneal incision a high degree of astigmia with delayed union followed the operation. In the other the interest centers on the failure of expression, followed later by successful combined extraction.

Case 38.—May, 1897: J. M. C., aged 50. A diabetic and myope of — 4.00 D. submitted to a flap extraction by me in the right eye. On account of rupture of the zonule and loss of vitreous I removed the lens by the wire loop, ten days later, V. with + 8.00 = 6/vii. Gradual loss of sight followed, and when seen a year later detachment of the retina and optic nerve atrophy was found.

Case 39.—May 2, 1908: Patient in Case 38. I made typical flap extraction with iridectomy on the left eye after attempting expression but had to do a cystotomy; the lens capsule, however, was extracted with forceps. V. + 10.00 ⊃ + 2.00, 90° = 6/xxiv.

Case 40.—September, 1908: I operated at a clinic on a man of about 60 in whom an attempt by another operator at extraction of cataract had been made but the lens had not been removed. Here I found a cataract with posterior synechiæ. Ordinary attempts at extraction of the lens after the incision

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[21] Meller: Ophthalmic Surgery, 1908, p. 1 et seq.

Table Illustrating Forty Operations of Expression of Cataract in its Capsule.

	Type of Cataract.					Visual Acuity.			Complications in Healing.						Gen'l Comps.	Vitreous.		Capsule.		Inst. Enter'g Eye.		Incision.	
No. of Cases.	Mature.	Immature.	Hypermature.	Morgagnian.	Complicated.	Good Results. Vision 6/vi to 6/ix.	Poor Results. V = Objects.	Failures.	Infections.	Iridocyclitis.	Iritis.	Striped Keratitis.	Hyaloid Opacity.	Delayed Union and High Astigmia.	Post-op. Mania or Psychic Disturbances.	No loss.	Loss.	No Rupture.	Rupture.	Graefe Knife Only.	Spoon, Loop or Forceps Beside Knife.	Sclero-corneal with Conjunct. Flap.	Corneal.
1.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..
2.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
3.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
4.......	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..
5.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
6.......	1	..	..	..	..	1	..	..	..	..	1	..	1	..	..	1	..	..	1	1	..	1	..
7.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
8.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	1	..
9.......	..	1	..	..	..	1	..	..	..	..	1	..	..	1	..	1	..	1	..	1	..	..	1
10.......	..	..	1	..	1	..	1	..	..	1	1	..	..	..	..	..	1	1	..	1	..	1	..
11.......	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..
12.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
13.......	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..
14.......	..	1	..	..	..	1	..	..	..	..	..	1	..	1	..	1	..	1	..	1	..	..	1
15.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..
16.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
17.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
18.......	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
19.......	1	..	..	..	1	1	..	..	..	..	..	..	..	..	1	1	..	1	..	1	..	1	..
20.......	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
21.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1	1	..
22.......	..	..	..	1	1	..	..	1	..	1	1	..	..	..	..	..	1	1	..	..	1	1	..
23.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..
24.......	..	1	..	..	..	..	..	1	..	..	1	..	..	..	1	..	1	..	1	..	1	1	..
25.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
26.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
27.......	..	1	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
28.......	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..
29.......	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..	1	..	1	..	1	..	1	..
30.......	..	1	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	1	1	..
31.......	1	..	..	..	1	1	..	..	..	..	..	..	..	..	..	1	..	1	..	1	..	1	..
32 to 37.	3	3	..	..	..	6	..	..	..	..	..	..	..	..	..	5	1	4	2	3	3	6	..
38.......	1	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	1	1	..
39.......	1	..	..	..	..	1	..	*	..	..	..	..	..	..	..	1	..	..	1	..	1	1	..
40.......	1	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	1	..	1
	18	15	4	3	8	34	2	4	1	2	5	1	1	3	2	80	10	80	10	25	15	37	3

* 1 ultimate detached retina.

of the sclerocornea without conjunctival flap failing to deliver I passed the wire loop behind the lens and delivered it without loss of vitreous. I understand on good authority that there was slow healing of the wound which possibly may have reopened and the lips of the wound overriding each other being followed by a very high degree of astigmatism 6.00 or 8.00 D. I have, however, not had the opportunity to examine the case since the day of operation.

I am convinced that from the circumstances under which the Indian operators are placed, the apparent lessened susceptibility to infection of their patients, the fact that wounds on Hindoos, like those on the lower races and wild animals, are more prone to heal than in the cultivated classes, and, above all, that these patients disappear from observation soon after the operation, we must depend for the end results on the testimony of others who practice in more civilized countries, where the patient's life history can be followed with more exactions. Therefore, the reports of Cheney,[13] Greene and others, although in proportion showing such a paucity of patients, are of more value to us.

"If the dread of the remote complications is relieved by further experience there is much to be said for the operation" (Elliot[22]). If the ultimate results of the operation are good in the foregoing cases I shall continue to practice it in selected cases.

The operation is not one to be attempted by any but the most skilled operator, and even with him is not to be chosen as a routine method, for it is a far more dangerous operation, except in the hands of an operator whose touch is fine, who has no trembling fingers and whose judgment is the most exact.

ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. WÜRDEMANN AND GREENE

Dr. Peter A. Callan, New York: I have never done this operation in uncomplicated cataracts. I have done it with a great deal of comfort to the patient in cases of dislocated lenses, and know of no operation that affords such good results when the lens is dislocated into the vitreous, and when, if proper pressure is made, the lens appears at the lips of the wound and emerges without loss of vitreous. I have been satisfied with the old operation, even if I have to make a secondary operation, and I think the dangers of a secondary operation are all due to choice of method in operating. I have seen Major Smith operate and it appeared to me that it was a contest between how much pressure he would apply and how much the hyaloid membrane would stand; in other words, a great amount of traumatism was required to expel the lens in its capsule, and we all, theoretically, at least, know that the more an operation is accompanied by traumatism the more likely the eye is to become inflamed from germs and infection, or iritis and iridocyclitis result, not to speak of loss of vitreous. There is usually no occasion, or rarely, at least, in the old operation to lose vitreous if the patient behaves himself. I have no doubt that this operation affords a great many possible points of advantage to Dr. Smith. He is a ruler, you might say, of an immense district. These patients come to him, he sees them for about one week, and then they disappear, never to be seen again. They are peasants. They are a class of people who do not demand much. They do not read, they do not write, they are living the simple life close to nature, and I think their eyes will stand a great deal more than our workers in the city would stand. Possibly I have no right to criticise this operation, inasmuch as I have never tried it, but I have been afraid to try it. I did not feel that I had any right to try it, as the methods ordinarily used gave me such good results. I hope that inexperienced men who have not the facility to gain experience will not rush in owing to the success of Dr. Greene and Würdemann, and of Major Smith, who is in a class by himself—a man who might perhaps take any kind of a knife and perform a cataract extraction with possibly perfect safety. It makes all the difference in the world whether one has that wonderful technic that he has. I do not think it is fair to put ourselves in that class. It seems to me that until we become practically perfect we ought to stick to the methods we are accustomed to and in which we are proficient.

Dr. Arnold Knapp, New York: I am very sorry that I can add very little on the subject of extraction in the capsule to what is contained in my description of a visit to Major Smith which was published in the *Archives of Ophthalmology* last year. I should like to say that in my opinion Major Smith's statistics are accurate. The operation is undoubtedly much more difficult than the ordinary one. Its value can only be established by exact statistics on the visual results obtained and by a record of the subsequent life of the eyes which have been operated on after this method. There can be no question but that the loss of vitreous even with the most skillful operators is much greater than in the ordinary operation. Loss of vitreous, to my mind, may mean imperfect healing of the corneal wound, entanglement of the iris, and subsequently a peculiar transformation of the anterior layers of the vitreous into slightly opaque tissue which interferes with vision. Even if the cataract is successfully removed in the capsule, reposition of the iris, straightening out of the columns of the coloboma can not be practiced with any degree of freedom for fear of vitreous prolapse, which is especially apt to occur at the end of the operation; consequently peripheric iritic adhesions or moderate prolapse of the iris were the rule in the cases which I observed. On the other hand, extraction in the capsule is an ideal and beautiful operation when the dislocation of the lens takes place readily. There is no postoperative irritation or inflammation of the iris and no further trouble with the capsule, which in many cases makes the secondary operation more hazardous and difficult than the first. The Indian patients, though younger in years, are about as old as ours, as they mature and grow old earlier. They are usually emaciated and very thin. I did not observe in India any of the fat, plethoric patients who with us are so notoriously prone to postoperative complications. The cataract patient in Jullunder is subjected to practically no preparation and is operated on directly after admission. Perhaps on the whole they are better behaved during the operation. Through the courtesy of Dr. Greene I was able to compare the lenses which he had extracted in the capsule in this country with some that I had brought from India. There was no appreciable difference. I wish to express my admiration for Dr. Greene's excellent results and trust that observation of the subsequent course of these eyes may confirm the claims which have been made for this operation.

Dr. Casey Wood, Chicago: Recently, at the invitation of Dr. D. W. Greene and in the company of Dr. Edward Jackson, I spent two days of about ten hours each in examining patients, witnessing and assisting at the procedure commonly known as Major Smith's operation for cataract. This work, done by Dr. Jackson and myself at St. Elizabeth's Hospital, the Old Soldiers' Home, and in Dr. Greene's private office, included a careful examination with the oblique illumination, the ophthalmoscope, and other methods of precision of patients who had been previously operated on (many of them reported) by this so-called Indian method and in comparing them—especially in the Soldiers' Home—with extractions done at various dates by other methods. In this way I had an excellent opportunity of watching the steps of the Smith operation as performed by Drs. Greene and Bonner in nine cases and of critically reviewing the results of the operation in the persons of 47 other patients who had submitted at the hands of Drs. Greene, Bonner and Millette to the Indian form of extraction from a few days to three or more years previously.

Of the 47 patients examined by the ophthalmoscope, etc., I never saw a single case of glaucoma or detached retina, although Greene, in his paper, reports one or more of the former.

The proportion of unusually good vision (20/15 to 20/30) was, I believe, greater than results from ordinary methods of extraction. I not only found central vision in those cases already reported by Dr. Greene to have been correctly reported but in some six instances to have been better than that set forth in his reports. This is a circumstance that lends plausibility to the claim that, while eyesight tends to deteriorate (chiefly as a result of opacification of the capsule) during the first six months following the older methods, it improves after the Smith operation, owing to the absorption of intraocular bleeding and the re-establishment of normal vascular conditions disturbed by corneal and other traumatism.

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[22] Elliot: Cataract Extraction, Brit. Med. Jour., Dec. 19, 1908.

The eyes operated on showed very few traces of iridic, capsular, hyaloid or pigmentary incarceration; the sclerocorneal wound appeared to have healed as smoothly as in the older forms of operation, and, with few exceptions, by first intention. The media were found to be exceptionally clear and the black, generally large pupil give an unobstructed and well-defined view of the fundus.

On the other hand, patients recently operated on showed, in practically every instance, decided scleral and faint ciliary injection—a vascular engorgement that appeared to me to persist longer than after the classic modes of extraction and to be due to mechanical irritation—traumatism involving the cornea, iris and, possibly, the ciliary body.

Corneal alterations—haze of the *substantia propria*, disturbances of the anterior epithelium, mild forms of keratitis—I saw in several cases of recent extraction; but I do not think that striped keratitis or other forms of the more serious corneal changes were seen more frequently than in the older operations. Properly or not, I regarded these early keratitic sequels as due to the friction of the cornea by the end of the strabismus hook.

Although there were no cases of thickened capsule or of capsular remains (except in a few instances in which the latter had ruptured during the operation but did not obstruct central vision), yet I saw seven instances of decided exudation into the posterior chamber, two evidently vitreous hemorrhages, five of them deposits on the hyaloid membrane.

There were many small, ideally shaped, key-hole pupils, but more than a majority were wide and large, with a tendency to upward displacement—a condition that, of course, marred the cosmetic result, even though it did not interfere with central vision at the near point.

If from this slight experience I might be allowed to venture an opinion as to the place of the Smith operation in ophthalmic surgery, I would say that, given an experienced, intelligent and skillful operator, working in conjunction with a tried and equally experienced assistant and counting success in cataract extraction entirely from the standpoint of the amount, quality and persistence of central sight six months after the operation, the Major Smith procedure is the best method for extracting all forms of senile cataract with which I am acquainted.

Dr. Walter R. Parker, Detroit: I have attempted the extraction of the lens in the capsule in 23 cases. In 3 of the cases I failed. One patient had postoperative mania the night of the operation and the eye was lost through panophthalmitis. This leaves 19 results about which to speak. In the 19 cases the average of vision from 10 days to two weeks after the operation was 6/36, not quite so good as the average of vision in the patients operated on by the regular method. In about 50 per cent. of the cases the lens turned on itself and was delivered in the classical way. The other 50 per cent. presented the upper edge first. There was a slight loss of vitreous in 21 per cent. of the cases. In no case was there any iritis, and in no case was the loss of vitreous so large that it influenced the result in any way. That the operation is a difficult one I think can not be denied. It certainly is more difficult than the classical operation. I have done about 480 extractions, 23 of them being those I have mentioned by this method. The first case I had was simplicity itself. The lens, presented with its upper border, came out very easily, and in that case before the patient left the hospital he had vision 20/20. That is the only case in which I can report the ultimate result. It was reported in the *Ophthalmic Record*, April, 1906. The amount of keratitis is much greater by this method than by the regular method. Dr. Greene has cleared up a point that in the few cases I have done has bothered me very much. If you will examine the eye carefully after operation you will find corrugations running vertically. This condition Dr. Greene attributes to disturbance in the anterior vitreous. That a trained assistant is necessary seems to me certain. The operation has been simplified very much in my hands by the new instruments, the large hooks and the double spatula. I think if one reads the original description by Major Smith one is inclined to believe there must be prolonged constant pressure on the cornea. After the pressure on the lower part of the cornea has ruptured the capsular attachments below, then all the pressure is stopped so that the lens will have an opportunity to come anteriorly, and it can be turned on itself by manipulation.

Dr. W. H. Wilder, Chicago: I think that in arriving at a conclusion on any important procedure which is more or less of an innovation we must study and analyze very carefully the results of any series of cases. Not wishing to offer any captious criticism of these papers, I should like to call attention to the fact that the first essayist whose paper purports to be a record of 40 cases of extraction in the capsule includes 3 extracted with the wire loop when he feared the vitreous might escape, an operation we all do in an emergency. Furthermore, there is no detailed record of the 6 cases from 32 to 37, so it is impossible to see how they can throw any light on the value of the operation.

The first essayist further advises that this operation be performed only in selected cases and "is not one to be attempted by any but the most skilled operator." This is conceded by all, and we must look to these skillful operators to guide us in this new operation.

Major Smith, I think, confesses to a loss of vitreous in from 7 to 8 per cent. of his cases, but the first essayist shows unquestionable skill, for he claims a loss of no more than 5 per cent. Referring to the value of the lid holder in place of the squint hook of Smith, he states that he loses "vitreous in not more than 5 per cent. of cases either with or without capsulotomy." The analysis of his cases, however, tells a different tale.

I do not wish to criticise his results in the least; he must have a great deal of skill, for he has had the opportunity, as he states of operating on 174 cases of cataract in the last two years, else how could his records show 37 of his 40 reported cases done since March, 1907, "selected" and suitable for this operation. I only submit that in offering conclusions to the profession, as guides to practice, one should show extreme care, not only as to statistics, but also as to the degree of enthusiasm manifested for the new method.

The first essayist states in his abstract that he finds this intracapsular operation as successful in his hands as the ordinary method of extraction; another evidence of his great skill, but not a very safe guide for the rest of us.

I have seen a number of these operations done by Dr. Greene at the Illinois Eye and Ear Infirmary, where I have many cases, but unfortunately not so many as 174 in two years, but have not felt it wise to vary from the old method. But I do see, if this can be proved successful in immature cataracts, it will be an extremely valuable method. Dr. Greene kindly consented to do some operations in our clinic and I had the pleasure and profit of assisting him. I wish to compliment him on the way he did them. Of the patients operated on 3 were mine. One patient with Morgagnian cataract got along beautifully. There was violent reaction after several of the operations, and in many of the patients there appeared this latticework keratitis which usually, I understand, clears up, and in most cases did, but not in all. One patient left the house with an opacity of the cornea which might be due to an injury to the membrane of Descemet. But, until we get some more positive statistics than those of Major Smith, the character and temperament of whose patients are so different from ours, we should withhold judgment; and then we should demand that such statistics as are presented to us be reliable in all details, because if we are going to weigh successfully the value of this operation we must know how much loss of vitreous occurs, what vision we get, and whether the after-history of the cases is as favorable as with the old method.

Dr. Percy Fridenberg, New York: It may be of interest to those present to hear of the after-history of the operations done by Major Smith at the New York Eye and Ear Infirmary last summer in the clinic of Dr. Gruening, then under my charge. One patient had had a preliminary iridectomy two weeks beforehand. The operation itself was performed without complications whatsoever, and that the assistant was sufficiently trained may be known from the fact that it was Dr. Arnold Knapp. The thing noticed by all the observers near was that both of these patients complained of intense pain. The second point was that the expression of the lens seemed to take much more time than usual. Dr. Callan has called attention to the fact that it is attended with a great deal of traumatism. When the patients' eyes were bandaged and they were sent back to the wards I asked Major Smith when he wanted them dressed. He said "Let them go four or five days; there are no complications to be feared and there is no necessity for an early dressing." Our practice is to redress them 24 hours after the operation. Acting on his instructions we let them go an extra day. In both cases there was an extreme reaction. In both cases there was very marked striated keratitis. In the case in which the iridectomy had been performed combined with the operation a narrow iridectomy without reposition of the coloboma but immediate expression of the lens, there was very marked iritis which progressed in spite of careful treatment. I had Dr. Gruening come down and see the case. It went from bad to worse and was one of those sluggish cases of iridocyclitis, and at the end of a month vision was practically *nil*. In the other case there was a severe striped keratitis, which gradually cleared up, but on the third day the patient, a woman of 63, complained of a great deal of pain in the eye and herpes of the cornea was found. I do not know whether the traumatism produced that or not, but it cleared up and finally the sight was 20/50 with correction.

Dr. L. Webster Fox, Philadelphia: Two years ago at our Symposium on Cataract before this Section I had assigned to me "The Delivery of the Lens and the Toilet of the Wound." Up to that date and since I made many attempts to deliver the lens in its capsule, after the method of Pagenstecher, and later, following as nearly as I could the Smith method, even going so far as to devise various shaped instruments to assist in the delivery of the lens. As I was searching through the literature I found that Dr. Greene had written the best description on the subject, and that his experience with the operation exceeded that of any other surgeon in our country. Having these facts in hand, I communicated with him. Later he invited me to Dayton to witness eight operations by the Smith method. Having become encouraged by the ease with which Dr. Greene delivered these cataracts in their capsules, I have, since my return home, performed five operations by that method. The first three were ideal; the fourth was performed on an unruly patient, and, while the lens was delivered, yet considerable vitreous was lost; the fifth was similar to the fourth, only the loss of the vitreous was greater and the result was a collapsed eyeball. [illegible] fact that I filled the eyeball with normal [illegible] was no vision in the eye, although the rotundity of the globe was restored—there evidently was complete separation of the retina. Dr. Greene is right when he asks: Is this operation to take the place of our common practice, or is it too difficult for the average ophthalmic surgeon to follow, or can it only be followed by the most skilled operators. Let the question be settled by those having exceptional opportunities? At present I am non-committal, but intend to follow this method until I have acquired more dexterity than I possess at present. I endorse Dr. Callan's advice that it is not fair to his cataract patient for any surgeon to operate by a new method until he has mastered the technic of that operation on pigs' eyes. I am sure that it is a practice which may well be adopted by all ophthalmic surgeons. This country must decide whether this operation is to be a popular one or not. From what I can learn the ophthalmic surgeons of European countries are not enamored with it, so far they have fixed our methods.

Dr. Frank Allport, Chicago: The first question that I wish to solve is: Am I going to give up an operation with which I am familiar and feel competent to perform and one which yields me excellent results, for one with which I am unfamiliar and one requiring extra skill and much experience to perform satisfactorily? In other words: Which operation in my hands will perform the greatest amount of good to the greatest number of people? The Major Smith operation is undoubtedly an excellent one and frequently yields startlingly brilliant results. In Major Smith's hands, with his constant practice and enormous experience, he is doubtless justified in the continuance of its performance. Dr. Greene, with his large operative material and natural and acquired operative skill, is doubtless justified in this work. I would be glad to trust my own eye in the hands of either of these gentlemen. The questions for me to settle, however, are: Am I going to experiment with this operation? Am I justified with the limited number of cases which I have at my command *per annum* in abandoning a satisfactory procedure for an extra hazardous operation with which I am unfamiliar and which requires an extra amount of skill to perform? I imagine this is a problem which we will all have to solve and I hope it will be solved in a manner which will best subserve the interests of our patients. I am an average operator with an average practice and with an average amount of skill. My senile cataract cases, I am sure, do not exceed 25 a year, and I do not consider that this number justifies me in experimenting with the Smith operation. Does it justify most of the gentlemen here present? I was particularly impressed with one thing that Dr. Greene said, namely, that it seems to be essential to success that the patient must constantly look upward in order to do away with the traction on the part of the inferior rectus muscle. This seems to me to be a great objection to the operation because it is practically impossible always to control the voluntary action of the eye on the part of the patient.

Dr. M. Wiener, St. Louis: I was one of the early enthusiasts regarding this operation. I have attempted 42 extractions in the capsule, 2 of which ruptured and can not be counted; I have had 7 vitreous losses. I abandoned this operation nearly two years ago and I will not perform another for a long while. I have had 3 cases of these 40 patients return with a membrane across the pupil. In 2 of these cases there was no loss of vitreous. One of them occurred a little over two years after the operation. Now if a membrane is going to occur where the capsule is removed I can not see the advantage of it, especially when the operation is very much more difficult than the usual extraction with iridectomy. Another danger which might be mentioned is this: I lost only one eye and that was in a case in which the operation itself was everything that could be asked; the lens rotated properly; but on the third day after the operation the patient developed a cold. He coughed and suddenly complained of pain in his eye. On removing the bandage I found a large bead of vitreous in the wound which I clipped off, but the eye atrophied and no vision was obtained. Of course, this might also happen when the posterior capsule remained intact, but it is not nearly so liable to happen. I think we should hear more of the ultimate results of this operation before proceeding too rapidly.

Dr. Mark D. Stevenson, Akron, Ohio: I have attempted the operation in 14 cases. In 2 I failed by rupturing the capsule. I had 2 losses of vitreous and 1 severe iritis. Every patient has good vision so far. I learned much concerning this operation during some visits I made to Dr. Greene last summer. I wish to emphasize the importance of a large corneal incision—fully the upper half. I do not especially like a conjunctival flap in this operation, especially toward the sides. A small one at the summit of the corneal flap may cause no trouble and be useful. I do not make a wide iridectomy but simply cut the iris through the sphincter, not removing any of the iris. After making the corneal incision and performing an iridectomy I stand at the side of the patient and the assistant stands at the head. By removing the capsule with the lens, there is not only no necessity for future needling, but the troublesome capsular fragments which in other operations lie in the wound, preventing healing, causing iritis, etc., are not present. There is no swollen ring of cortex as in other operations pressing against the iris. At a meeting of the Ohio State Medical Association last month I first heard Dr. Greene state that the lens often turned over in its exit from the eye. Months before and the first time it occurred to me I thought it was an accident, but it was such a successful operation without loss of any vitreous, that I decided in the future to try to make the lens turn over. First I rub the cornea with the end of the hook a little above the lower border and parallel to it, gradually widening my arc until the lower part of the zonula is considerably depressed. Next I rub on the margin of the cornea and even on the sclera pushing it behind the edge of the lens which has been displaced not only backward, but because of its slanting surface, upward. As soon as the lower edge of the lens is in front of the crease pressed into the cornea by the hook, the hook is gradually swept upward and the lens inverted with much less chance of vitreous loss than if it had been pushed directly out of the eye. In this way, the lens comes first and the corneal opening is blocked until it passes. I have found that a properly shaped Pagenstecher's smooth glass rod spatula makes an excellent instrument with which to press the cornea. I think I prefer it to the strabismus hook. I would not advise the use of forceps in delivering the lens, as the capsule would immediately rupture.

Dr. J. W. Millette, Dayton, Ohio: I have assisted in a goodly proportion of these 75 cases and have carefully followed the development of each case and have correlated and prepared the statistics in connection with the paper, and I desire to state that Dr. Greene has approached this work in the true spirit of the student. Recognizing the imperfect character of cataract work, and trying to find some better method, he has given us the truthful record of the results obtained. He requested that I speak briefly of what the assistant does. During the incision and iridectomy the upper lid is retracted by the Noyes elevator. The lower lid is slightly retracted with the face of the thumb or index finger. I most frequently use the finger. The patient's lids are under absolute control, a thing that is not true and can not be true with any speculum with which I am acquainted. The patient can not do harm by squeezing. From the time the incision is finished the patient may do great harm by contraction of the inferior rectus, which opens the flap and exposes the contents. If he will persistently look toward the ceiling, as he lies on his back, he is in as nearly perfect condition as is possible. After the iridectomy is made I lay aside the Noyes elevator and use the large hook. With this the action of the orbicularis is under perfect control.

The operation has some features which will hinder its universal adoption. 1. It requires a trained assistant. Major Smith and many of his followers say that the assistant is almost as important as the operator himself. 2. It requires a greater degree of skill than the capsulotomy method. Sufficient skill may be attained by any man who has skill enough to do the ordinary extraction, if he will practice. I do not advise practice on pigs' eyes, nor calves' eyes, nor sheep's eyes. I have wasted dozens of them. They are most unsatisfactory. But a good live dog, properly bound up, is a good subject. Rabbits are good, the dog is the best in my experience. 3. There is a somewhat greater degree of violence than in the other methods, but the violence to the cornea even is not so great as it seems. I have observed that the men who have been in these clinics and have placed the hook on the cornea have been prone to begin with too much force. A little more force than the weight of the hook is sufficient, together with the pressure in one place with the spud. 4. There is also loss of vitreous more frequently. As to the future of the eye from loss of vitreous, up to one-third, we have no positive statistics. We should hold ourselves agnostic. There may or may not be future evils resulting from this minor loss. 5. The cosmetic effect is not so good, but occasionally we do get that ideal keyhole appearance. Ordinarily the pupil is "U"-shaped with a broad base and frequently displaced upward. However, I believe that there are four considerations to which we must give their deserved supremacy. The first is the permanent disposition of the capsule and its contents. Second, a secondary operation is avoided. Third, postoperative complications are practically *nil.* Fourth, most important of all, we get better vision.

I have had the privilege of studying the 75 operations by the capsulotomy method just preceding these. As nearly the same kind of eyes as one could get, patients of the same character, the same age, operated on by the same operator under conditions as nearly identical as could be, and the vision, as recorded in these records, with the capsulotomy method was 20/40, while with the Smith method it is 20/27. But to know more fully the good and bad qualities of the method and to know if it be generally practicable, we must have the results of more operators carefully and without prejudice recorded. The pioneer work being done in the clinics at St. Elizabeth's Hospital and the National Military Home at Dayton should be emulated. We want to know the best, for the best will never reach the conscientious oculist's ideal for his patient.

Dr. H. V. Würdemann, Seattle: As is to be expected, the sentiment of the Section is somewhat unfavorable from the theoretical side, but, gentlemen, try 10 operations and then come and talk about it. In pushing the lens back I do not think when it turns it goes into the vitreous through the fossa patellaris, through the hyaloid membrane; in the cases in which it makes the characteristic somersault I have not lost vitreous. In the others in which the whole ligament seemed to rupture and the lens came straight out I have had loss of vitreous probably most of the time. There are less postoperative disturbances. I have practically no iritis, 0.5 per cent.—see the statistics of Smith, those of Dr. Greene and my own. Iritis may be due to infection. In some of my early cases I failed to deliver the lens and I went on with the other operation. The central acuity seems to improve after the operation rather than to decrease as after the capsulotomy operation, except in my experience in one case in which hyaloid opacity followed. Striped keratitis, in my opinion, depends as much on the use of strong percentages of cocain and on bichlorid solution or ointment as on the rubbing of the cornea. I beg to correct one of the speakers in that my statistics were somewhat distorted by him. I remarked that I did 154 cataract operations, of which 40 were expression operations, within the course of two years, and printed in the paper is a report of 10 cases out of the 40 with loss of vitreous, making 25 per cent., not quite so good as Smith's, instead of "better." The meat of the cocoanut of this discussion was the fact that this is a better operation for cataract than all others but must be done by skilled men, and even oculists of much experience will have to learn the technic by getting down to pigs' or, preferably, rabbits' eyes, because the lens of the rabbit's eye is more like that of the human eye, and acquire dexterity before operating on the human eye.

Dr. D. W. Greene, Dayton, Ohio: I wish to impress on the members of the section that I have approached this subject in the spirit of a student. I have made 145 cataract extractions since the first day of last August. All except 5 of these have been by this method, so I need hardly tell you that I have not selected the cases. I am not here to champion the Smith operation. Smith will have to take care of that, and ophthalmologists who have sufficient opportunity will have to settle the future of the operation. I am impressed with the operation and the results I have had from it, and I shall continue to practice it until I see some better reason than I have yet seen to depart from it.

In regard to Dr. Callan's statement regarding the pressure, I think that is a point where men make a mistake. There is no great pressure applied. Dr. Casey Wood will bear out this statement. He manipulated the hook in one case, and the lens described all the versions seen in the diagrams and came out whole. Dr. Jackson did the same thing. There was no loss of vitreous. It is not so much the pressure as the manipulation that delivers the lens. Men get an exaggerated idea of it. You have an empty anterior chamber and you are pressing against a soft bag, so to speak, and there is nothing behind to resist you except the vitreous, hence the manipulation seems excessive.

Some one spoke of Major Smith operating on these patients and never seeing them again. He says that is absolutely untrue, but that in India they will hunt him up and he sees them more frequently than he wishes to. I have seldom seen the iris prolapse in healing. This accident is usually associated with high blood pressure, which I have reduced whenever possible.

As to the visual results another mistake is easily made; if you test these cases as after an ordinary cataract operation, you will be disappointed. Visual results, like old wine, get better with age, and one should not refract these patients under thirty days after the operation. Three years ago I reported twenty-two cases of so-called Smith operation at Oakland, Mich. I had one case of glaucoma occurring between my visits to the National Military Home. I visit the Home on Tuesday afternoon, and not again until Friday afternoon. In the meantime, the cases are under the care of an assistant, who is not an oculist. He is a member of the medical staff, and I take him as an assistant for a year and teach him all that I can. This case of glaucoma occurred between my visits and the eye was lost. The other case of glaucoma came on a year after the operation and I do not think had any connection with it at all. These make 98 patients whom I have operated on with one case of glaucoma, up to the time my statistics were compiled.

In regard to keratitis I have been awkward enough to get it, but less frequently now than when I began the operation. If one will make steady pressure and manipulate the hook properly and keep away from the center of the cornea and deliver the lens quickly he is not likely to get it. Thirty to forty years ago Pagenstecher noted the presence of lattice keratitis and also a disturbance in the anterior layers of the vitreous which I have also seen, but they have always cleared up in my experience.

Visual results are better than by the old method and have remained better so far as I have watched them. The future of this operation, depends entirely on visual results. I do not know the future of this method, I am not here to tell you that the smallest loss of vitreous does not harm. I know better than to do that. We do not yet know what the ultimate result of loss of vitreous will be. We have no statistics to determine it, Major Smith is not in a position to determine it definitely, and pathologists can not help us. I can only say that I have not seen any harm result from the loss of one-third up to this time. The future of the method depends on how the profession in this country, men of broad and liberal minds with large operating fields, will accept it. If they are ready to take it up and follow it to its legitimate conclusion, we will soon know its place among cataract operations, which will be largely determined by the percentage of vitreous loss and the harm, if any, which ultimately results from moderate loss. In my opinion, these questions will never be settled by theoretical or *a priori* reasoning, but must be settled by cold statistical facts and figures.

SECTION COMMITTEE REPORTS

[EDITOR'S NOTE: The following reports of committees were presented before the Sections at the Atlantic City Session, June 7 to 10, 1909. They are referred to in the minutes of the Sections which appeared in THE JOURNAL, July 3.]

REPORT OF THE COMMITTEE ON THE REVISION OF THE PHARMACOPEIA [*]

It has not been the aim of this committee to do more than bring forward what seemed to be the changes which might advisedly be made in the revision of the Pharmacopeia from the standpoint of the clinician. There are many points which the general committee on the revision have to consider which do not specially concern us. As is well known there are many interests to be considered, perhaps how many only those on the committee have any idea. The discussions of these, however, is not in place here, and it seems advisable to take up only those points which may profitably be considered by the clinician.

What should the Pharmacopeia include? Should it be kept to the smallest limits or allowed to expand? Should every drug which is included in it be carefullly scanned at intervals to see if its position is still deserved? Should additions be looked at with careful scrutiny or should we go on the principle that everything which the profession uses should be included? Should combinations of drugs be admitted or not? Should proprietary or patented remedies be admitted to it? Should Tct. X Co. be in the Pharmacopeia when Tct. Y Co is not? Ask yourself some of these questions put them to your friends and you begin to realize how many views there are. It is probably not our province to pass on these, but still we may say something.

Under the title, "The Capture of the Pharmacopeia; With Suggestions for its Recapture," Leffman[1] has pointed out what a small proportion of the committee on the last revision was composed of clinicians, the majority being pharmacists. A reversal of these numbers would seem to be in order—yet it can safely be said that the majority of the profession take little interest in the Pharmacopeia, know little about it, and do not feel that it really concerns them. This is a matter which we should regard very seriously and anything which can aid in making the Pharmacopeia more used as a handbook by the profession is well worthy of consideration. Of course there are many causes for this and the remedy lies in various lines, such as the proper instruction of students in their attitude towards and knowledge of it. But these hardly come in the province of this discussion.

It will be granted that it would be a great advantage to have the profession more familiar with it and as far as possible using the drugs therein contained. That there are certain drugs which will be used and can not be admitted is evident. For one thing the revision takes place only at intervals and new substances protected by a trademark or patent must be considered. At present many of them are in extensive use. But the great bulk of the drugs which we need to use are found in it. Probably a certain number of the profession will use substances or combinations which can never be admitted. The more they know about the Pharmacopeia the fewer will belong to this class. To have the Pharmacopeia used more extensively by the profession seems an important matter and the more convenient it can be made, the more closely we can bring the drugs in it to correspond with the ones in active use, the better.

An important point which should be kept in mind is the possibility of making the Pharmacopeia something which will come into constant use by the members of the profession generally. In bringing this about one important thing is the reduction in size, which seems to be a point worth considering. Might it not be possible to omit the appendix? The reply may be made that this is an integral part of what the Pharmacopeia should be and yet for the medical profession it is of little importance. Perhaps an edition for the profession might be published in which the various directions regarding preparations, which belong more strictly to the pharmacy side, might be omitted. Another point which is put forward for discussion is in regard to the publication of an annual bulletin, such as has been brought out by the American Medical Association. The value of this to the profession has been tremendous and we owe a great many thanks to those who have done the work of its preparation. Would it be possible to have a somewhat smaller publication in association with the Pharmacopeia brought out every year or every second year? If this were done the profession would probably regard the Pharmacopeia more as a volume dealing with everyday things than as a record of the past. It may be the general opinion that this is better left to the American Medical Association, but the advisability of the other course seems worthy of consideration. This would not exclude the work at present being done and might be carried on in conjunction with it.

Another point is as to the advisability of introducing any substance "which cannot be produced otherwise than under a patented process or which is protected by proprietary rights." The advisability of doing this is hinted at in the eighth Pharmacopeia. Your committee feels that this would be a mistake and that the position taken in the last Pharmacopeia should be maintained. To do otherwise is to admit the thin edge of what would prove to be a very large wedge. Certain drugs might be omitted without any harm being done but who is to draw the line? It seems safer to hold by the present rule; there is less danger in that than in the other case. How many of the preparations which would have been admitted ten years ago, would be considered worthy of a place to-day? How many which might be regarded as worthy of a place to-day would be retained ten years from now? At the same time one must recognize that there is much to be said for the other view, that under proper safeguards some of them might be admitted.

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[*] Read in the Section on Practice of Medicine of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Read before the Philadelphia County Medical Society, March 24, 1909.

Drugs which should be dropped from the Pharmacopeia. It may be thought well to retain some of these in the National Formulary for various reasons. The majority do not seem to deserve a place and should be dropped for want of sufficient recognition and use. Some are used in certain localities, but *this should not justify their retention.*

Acetum Opii.
Acidum Camphoricum
Aconitina: (This should be dropped on account of its strength and variability as well as the dangers of poisoning.)
Adeps: (The use of this has almost entirely ceased. It has been replaced by more suitable substances.)
Althea.
Anthemis.
Berberis: Fluidextractum Berberidis.
Calamus: Fluidextractum Calami.
Calendula: Tinctura Calendulæ.
Cassia Fistula.
Chimaphila: Fluidextractum Chimaphilæ.
Chirata: Fluidextractum Chiratæ.
Cimicifuga: (Tincturæ Cimicifugæ; Fluidextractum Cimicifugæ; Extractum Cimicifugæ.)
Cinchonidinæ.
Cinchoninæ Sulphas.
Cypripedium: Fluidextractum Cypripedii.
Euonymus: (Fluidextractum Euonymi; Extractum Euonymi.)
Eupatorium: Fluidextractum Eupatorii.
Frangula: Fluidextractum Frangulæ.
Gambir: (Tinctura Gambir Composita; Trochisci Gambir.)
Geranium: Fluidextractum Geranii.
Hedeoma: Oleum Hedeomæ.
Krameria: (Tinctura Krameriæ; Fluidextractum Krameriæ; Extractum Krameriæ; Syrupus Krameriæ; Trochisci Krameriæ.)
Lappa: Fluidextractum Lappæ.
Linimentum Saponis Mollis: (This causes confusion as it is not *intended to be used as an embrocation.* The same might be changed.)
Marrubium.
Matico: Fluidextractum Matico.
Matricaria.
Mezereum: Fluidextractum Mezerei.
Oleum Coriandri.
Oleum Erigerontis.
Oleum Sabinæ.
Oleum Sinapis Volatile.
Pareira: Fluidextractum Pareiræ.
Phytolacca: Fluidextractum Phytolaccæ.
Pimenta: Oleum Pimentæ.
Piperina.
Pulvis Acetanilidi Compositus: (There does not seem any reason [illegible] n.)
[illegible] illajæ: Tinctura *Quillajæ*)
[illegible] Rhois Glabræ.
Rubus: (Fluidextractum Rubi; Syrupus Rubi.)
Sabal: Fluidextractum Sabal.
Safrolum.
Salvia.
Scutellaria: Fluidextractum Scutellariæ.
Staphisagria: Fluidextractum Staphisagriæ.
Stillingia: Fluidextractum Stillingiæ.
Unguentum Potassii Iodidi.
Unguentum Zinci Stearatis.
Unguentum Hydrargyri and Unguentum Hydrargyri Dilutum: (Much confusion is caused by these *two* ointments and one should be dropped.)
Xanthoxylum: Fluidextractum Xanthoxyli.

In regard to the question of *additions*, the committee recommends that the physiologic standard for the strength of certain drugs be adopted. Among these we should suggest digitalis, strophanthus and ergot. At present various methods are used, and it would seem wise that a definite standard should be laid down. Regarding the drugs which should be added, the following seem worthy of consideration:

Calcium Lactate: This is being used more and more and is rapidly replacing calcium chlorid.

Phenolphthalein: This has come quite extensively into use and its value seems to be definitely established. It might possibly be wise to add the preparation which can be given hypodermically.

Arsenic: The use of arsenic has increased a great deal of late, especially its hypodermic administration, and it seems wise to have some preparations in the Pharmacopeia which can be readily used in this way. Of these the value of sodium cacodylate and sodium aminophenyl arsenate seems definitely established.

Theobromin: The value of this seems sufficiently established.

Bile Salts: The suggestion that their inclusion be considered seems worthy of consideration.

Diacetyl-morphin and *Theobromin-sodio-salicylate* are extensively used and worthy of being added.

It may seem that the number of drugs to be included is in striking disproportion to the number struck out. The overgrown condition of the Pharmacopeia supports the advisability of this. There seems good ground for the feeling that we should go slowly in adding to what has too much already.

Joseph A. Capps, Chicago.
Joseph H. Pratt, Boston.
Thomas McCrae, Baltimore.
John T. Halsey, New Orleans.

ABSTRACT OF DISCUSSION

Mr. M. I. Wilbert, Washington, D. C.: From a pharmaceutical point of view the report is a very pleasing one. There can be no doubt but that members of the medical profession *should absolutely dictate the contents of the Pharmacopeia.* That is their province, it is their duty. The Committee on Revision of the Pharmacopeia is often mistaken for the revision convention. We frequently hear that the clinician, the medical practitioner, is not represented on the revision committee; as a matter of fact the clinician requires no representation on the revision committee at all. There is nothing in connection with the work of the revision committee that is of any direct interest to him, or to which he can contribute materially; he would hamper rather than aid the work of revision. The medical profession should dictate what the Pharmacopeia should contain and the method of providing it.

Much has been said about the size of the Pharmacopeia. Here again the medical man should insist that a more distinct division be made between pharmacopeial matters proper and the chemical tests. Much of the material now in the Pharmacopeia itself could be relegated to this appendix, and thus divide the Pharmacopeia into two volumes; one the Pharmacopeia proper which the physician could use and which would contain all the information he wanted, while the combined volumes should contain all the information the pharmacist needs and must have. As the report states, the function of the Pharmacopeia is primarily one of standards; it should be simply one of standards and not a medical lexicon. If the standards are correct they do not need changing annually and only such changes need be made as are found necessary to correct palpable errors. The more or less ephemeral drugs are sufficiently well defined by the Council on Pharmacy and Chemistry of the American Medical Association in "New and Nonofficial Remedies."

Ninety years ago, when the United States Pharmacopeia was originated, it was in the hands of medical practitioners who had a wide scope of vision. They wished to make the book valuable and to keep it in harmony with the standards established abroad. Singularly enough, that idea prevailed until the Pharmacopeia came to be revised by pharmacists and converted into a book on pharmacy. In 1902, an international congress was held in Brussels for the purpose of establishing standards for potent medicaments. Among the articles acted on was mercurial ointment; a 33 per cent. ointment of mercury was adopted as an international standard. The Committee on Revision of the United States Pharmacopeia, in attempting to comply with the international requirements, introduced a diluted mercurial ointment, or blue ointment, which, by the way, is not blue at all, but green, and does not comply with international standards except so far as its strength is concerned. If the Pharmacopeia is to meet the needs of the medical profession true international standards must be insisted on.

I wish to congratulate the profession on the tone of the report. If the medical practitioners of the country will assume a more dictatorial policy, the next Pharmacopeia of the United States will be of value to the medical man and a real necessity to the pharmacist.

Dr. Lewis A. Conner, New York: The difficulties attending the selection of the more or less obsolete drugs to be dropped from, and the new drugs to be added to, the Pharmacopeia are many and great. The recommendation of the committee as to the drugs to be dropped will, I think, be generally approved. They can all well be spared. The number of drugs recommended for admission, however, is, it seems to me, regrettably small, and the reason for this lies in the fact that the committee has decided not to recommend any drug which has been patented. However much we may prefer to use unpatented drugs, the fact remains that practically all the modern, synthetic drugs are so patented, and among this number are many remedies in constant, daily use, which could not be dispensed with without the serious crippling of our therapeutic resources. Such drugs, for example, as aspirin, adrenalin, argyrol, heroin, ichthyol, veronal—to mention only a few out of many—shall we abandon their use merely because they are patented? I think few would venture to recommend so radical a course. But, if we are to continue to use them, should they not, if they have proved their usefulness, have a place in the Pharmacopeia? It seems to me that they should.

It will be generally admitted, I think, that the Pharmacopeia at present fails to meet the needs of the practicing physician and has lost its position as guide and book of reference in his daily work. The reason for this is chiefly that in it he seeks in vain for information concerning many of the drugs is general use. It is idle to expect that he will abandon the use of drugs merely because they are not to be found in the Pharmacopeia. It is much more likely that he will discard the Pharmacopeia itself. One of the very best evidences that the Pharmacopeia does not at present meet the requirements of physicians is the fact that this Association has felt it necessary to publish the two admirable little volumes, "Physicians' Manual of the Pharmacopeia and National Formulary" and "New and Nonofficial Remedies."

If the Pharmacopeia is to regain its position of prestige and usefulness, so far as it concerns physicians, some radical changes in its policy are necessary. In my judgment, the most important of these are: First, the publication of a greatly abridged "Physicians' Edition," as has been suggested by Mr. Wilbert. Second, the inclusion of the more trustworthy and useful of the modern, synthetic drugs, whether they be patented or not. Third, the issuance at frequent (perhaps yearly) intervals of bulletins recording the changes which have been made, the new drugs introduced, the undesirable ones dropped. With the enormous yearly output of new drugs, a certain small proportion of which are really valuable, it is idle to suppose that a volume of this sort which is revised only once in a decade can keep abreast of current practice. The needed flexibility can be obtained, I think, only by the publication of such bulletins at comparatively short intervals.

Dr. John F. Anderson, Washington, D. C.: One very important agent has been omitted from the list of proposed additions to the Pharmacopeia, namely, tetanus antitoxin. Diphtheria antitoxin was admitted to the Eighth Decennial Revision of the Pharmacopeia following the promulgation of a standard unit for diphtheria antitoxin by the U. S. Public Health and Marine-Hospital Service. On Oct. 25, 1907, a standard American unit for measuring the strength of tetanus antitoxin was promulgated by the same laboratory. The great value of tetanus antitoxin as a prophylactic alone certainly entitles it to admission to the Pharmacopeia, and I hope that it will be included in the next revision.

Dr. M. Clayton Thrush, Philadelphia: A smaller edition of the Pharmacopeia for the use of clinicians should include the Latin and English name of each drug, its synonym, a description of the important characteristics of the drug, its dose, solubility and compatibility, with therapeutic action expressed in a few words, and a few other particulars; which is all the average clinician wishes. Such a book could be bought for about fifty cents. A book entitled the "Physicians' Manual of the Pharmacopeia and National Formulary," published by the American Medical Association, contains those very facts; it is a small book and gives the official name, synonyms, characteristics, doses, therapeutic indications, etc. This is really all the physician needs. Therefore, why not supply ourselves with such a manual; in it could be inserted year by year the drugs that the Council on Pharmacy and Chemistry has examined and recommended.

With regard to the admission of new drugs, there is one drug that is largely used at the present time and under so many different names, viz., the active principle of the adrenal gland. This is supplied under different names by the different manufacturers, but all preparations are of the same strength, 1 to 1,000 in normal salt solution. Why not make this official? At present the gland itself only is official. But only about one physician in one thousand uses the gland; all others always use the active principle. It is certainly difficult to decide what is best to add, and what to dismiss.

With regard to dismissals, with such drugs as saw palmetto, for example, there is much adverse criticism. Hallberg collected one million prescriptions in order to show what drugs were most used in this country. He found that saw palmetto, while only prescribed about three times in a thousand prescriptions in Philadelphia, was prescribed over thirty times in Chicago, and so it is with all those drugs if we but investigate. There are drugs used in one portion of the country that are not at all used in another portion. A Pharmacopeia should not be one designed for Philadelphia alone, but for the United States. Therefore, it is important that all the drugs in use all over the country should be included. Here is another point that should be borne in mind; while these drugs are practically of no use, I believe they should be placed in a special place and not entirely dropped, for they may be of some service to certain practitioners in certain localities.

Report of the Committee on Proposed Alterations in the United States Pharmacopeia *

Your committee, appointed by the Chairman of this Section to examine into the merits of various remedies alleged to be of value in ocular diseases, begs to make the following report:

With a view of choosing what seems to be of distinct value to the practitioner and, as such, proper additions to the United States Pharmacopeia of 1910, they decided to settle the matter by a vote of members of the Section. As a preliminary to this action, it was resolved to consider only those remedies that had been investigated by the Council on Pharmacy and Chemistry of the American Medical Association. As is well known, most of the remedial agents recently recommended, generally in glowing terms, to the ophthalmologist are strictly proprietary. As a rule, neither the trade name nor the literature sent out by their owners, gives more than an inkling of their real character, nor do they throw any light on the process of manufacture. He who prescribes such a remedy is altogether in the dark in these important particulars, and might almost as well study his therapeutics in the advertising columns of a trade journal. Fortunately, we have an agency (for which we have mainly to thank Dr. Leartus Connor and its present secretary, Dr. George H. Simmons) that analyzes the constituents and reports on the pharmacal and therapeutic characters of every drug that gains, by advertisement or other means of exploitation, any considerable degree of notoriety or public favor. We refer to the Council on Pharmacy and Chemistry whose reports are published, first of all in The Journal, and subsequently in a periodical entitled "New and Nonofficial Remedies." The great majority of new proprietary and other remedies exploited during the past ten years have been investigated by the Council and described in this publication.

From the long list of drugs thus treated your committee first chose fourteen, as representing the most desirable additions to the new Pharmacopeia from the purely ophthalmic standpoint. After some consideration of the subject, it was decided that this number might well be reduced to six. To this end a postal-card vote of the Section (about 930 members) was taken with the following result:

Adrenalin hydrochlorid received	552 votes
Dionin	538 votes
Argyrol	474 votes
Fluorescein	407 votes
Protargol	285 votes
Holocain hydrochlorid	257 votes

The variation in these numbers is to some extent explained by the fact that quite a few members voted for fewer than six remedies—a proceeding that has the sympathy of a portion of your committee, who feel that extreme caution should be exercised in giving official sanction to any new remedy; especially to one that has not satisfactorily stood the test of time.

In our opinion the ophthalmologist may easily dispense with some ocular remedies official in the Pharmacopeia of 1900, and this fact might be profitably urged on the Revision Committee in 1910. Among these your committee would suggest the following, as having fallen into general disuse, and we recommend that they be dropped from the revised Pharmacopeia:

Argenti nitras mitigatus or "mitigated stick;" the oleate of cocain; the oleate of atropin; the salicylate of physostigmin (eserin); the Extractum Scopolæ and the Extractum Stramonii.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

It is further recommended that, admitting the therapeutic value of hyoscin hydrobromid, scopolamin hydrobromid be dropped; that it is not necessary to retain two salts of hyoscyamin and that either the sulphate or the hydrobromid be rejected by the Committee on Revision.

Finally, the Council on Pharmacy and Chemistry of the American Medical Association has recently asked your committee the following question: "Does homatropin hydrochlorid offer any advantages over the official homatropin hydrobromid, or does the latter answer for all purposes?" As this committee has before it no reliable data on which to estimate the relative merits of these two salts, it was decided to submit the matter to the Section, declaring at the same time its belief that homatropin hydrobromid appears to meet all the demands made on it as a satisfactory ocular remedy. It has few objectionable incompatibilities, does not readily undergo decomposition, is very soluble in ordinary menstrua, is practically non-irritant, and is readily absorbed by the ocular tissues. *A priori*, there seems to be no reason why it should be displaced by the hydrochlorid.

All of which is respectfully submitted.

Edward Jackson. Casey A. Wood, Chairman.
T. B. Schneideman. A. Edward Davis.

Preliminary Report of the Committee for the Study of the Relation of Tuberculosis to Certain Diseases of the Eye [*]

The Chairman of the Section requested me to form a committee for the collective study of the relation of tuberculosis to certain diseases of the eye whose etiology is in many cases obscure. It was thought that a number of observers could in time accumulate enough data to draw conclusions that might not be warranted by the smaller number of cases that would be available to a single individual. The following gentlemen have signified their interest in the subject and their willingness to engage in the work of investigation according to the plan agreed on:

C. S. Bull, New York City.
Arnold Knapp, New York City.
F. Park Lewis, Buffalo.
L. Webster Fox, Philadelphia.
W. C. Posey, Philadelphia.
G. E. de Schweinitz, Philadelphia.
H. F. Hansell, Philadelphia.
Harry Friedenwald, Baltimore
R. L. Randolph, Baltimore.
Hiram Woods, Baltimore.
G. S. Derby, Boston.
W. H. Roberts, Pasadena.
Melville Black, Denver.
David H. Cooper, Denver.
H. C. Parker, Indianapolis.
A. E. Bulson, Fort Wayne, Ind.
L. W. Dean, Iowa City.
E. R. Lewis, Dubuque.
W. H. Wilder, Chicago.
Charles H. Beard, Chicago.
E. V. L. Brown, Chicago.
William E. Gamble, Chicago.
H. Gradle, Chicago.
C. D. Wescott, Chicago.
Oscar Dodd, Chicago.

The committee will be pleased to have the cooperation of others who will study cases according to the plan outlined, keeping careful records on blanks prepared for the purpose. The examination of patients with eye disease suspected of being tuberculous is made according to the following outline:

EXAMINATION OF CASES WITH DISEASE OF THE EYE FOR SUSPECTED TUBERCULOSIS

1. A thorough physical examination of nose, throat, lungs, joints, etc.
2. A careful statement of the diseased condition of the affected eyes.
3. Examination with tuberculin.
   (a) *Cutaneous Test:* One drop of old tuberculin to be gently rubbed into two scarified points on the arm about 5 cm. apart. For control one drop of 0.5 per cent. carbolic glycerin should be gently rubbed into a scarified point midway between and a little to one side of the line of the other points.

   °Tuberculin.
   °Control.
   °Tuberculin.

   The scarified point need not be over 1/12 inch in diameter and care should be taken not to draw blood, but to see that serum begins to exude.

   (b) *Conjunctival Test:* This should be practiced simultaneously with the cutaneous test if one is to all appearances sound and there is no history of previous disease in it. One drop of 1 per cent. solution of old tuberculin in physiologic salt solution should be dropped into the conjunctival sac, and the patient's eyes kept closed for three minutes. The case should be observed twelve hours, twenty-four hours and forty-eight hours after the test to note the reaction, if any.

   Reactions: Time when reaction to cutaneous test occurs should be noted, and the case should be seen in the first twenty-four hours. Size of areola should be measured in millimeters and the intensity of the reaction noted. Temperature should be taken and general condition noted. Vaccination point should be observed twenty-four and seventy-two hours after test, especially if reaction is delayed. The degree of conjunctival reaction should be noticed within twelve hours after the test and a careful record kept of its character and duration so as to compare with cutaneous test. If both these tests are negative at first they should be tried again in the same manner after three or four days. If the tests are still negative, and the observer has reason to suspect that the case, from its clinical appearance, is of tuberculous origin, the subcutaneous test should be used.

   (c) *Subcutaneous Test:* The patient should be in the hospital, or may be instructed (if intelligent enough) to take his own temperature at home. The temperature should be taken every two hours for two days prior to the injection. If it is found to be normal the test may be practiced according to the method of Koch. One mg. of old tuberculin first injected. If result is negative at the end of three days, 3 mg. may be used. If the result from this is negative at the end of three days a 5 mg. dose may be used. If this is negative one may assume that active tuberculosis does not exist. If result is positive a record of the temperature should be made every two hours and the character of the reaction described. Particular notice of the affected eye is important to see if a local reaction is present. This should be indicated by increased ciliary injection or an aggravation of the original trouble. Careful note should be taken also of the point of puncture, for reaction here is very delicate.

It is thought that the following diseases may be profitably studied by this method: Blepharitis, particularly chronic, ulcerative cases; chalazion; follicular conjunctivitis or adenoid hypertrophy of conjunctiva; phlyctenular disease of the conjunctiva and cornea; scrofulous pannus; interstitial keratitis (non-syphilitic); episcleritis; scleritis; sclerosing keratitis; chronic iritis and iridocyclitis when etiology is obscure (relapsing or recurrent forms are especially suspicious); uveitis with hyalitis; choroiditis.

If several observers are working in the same hospital, it would be convenient to have all cases of one kind assigned to one man in order to simplify the work. This, however, is a question of convenience. All the observers engaged in this work are supposed to use in their tests tuberculin from one factory, that of H. M. Alexander & Co. It is hoped that at the next meeting, as a result of this cooperative work, there may be something of interest to report.

William H. Wilder, Chairman.

Report of the Committee on Collective Investigation Concerning the Ocular Muscles [*]

Almost immediately after the chairman of this committee was asked to undertake the work he associated two others with himself, Dr. Howard F. Hansell of Philadelphia, and Dr. Edward Jackson of Denver. The latter found it impossible to continue on the committee, and later his place was taken by Dr. T. B. Schneideman of Philadelphia.

The first step was to ascertain who were at all interested in such a study. Accordingly a circular letter was issued to each member of the Section on Ophthalmology. A copy of this letter is here appended as Exhibit A.

The total number of replies received to this was one hundred and twenty-five. It was gratifying to find that every member thus replying expressed approval of the effort, although forty found it impossible for various reasons to join in the study. An examination of these replies and certain considerations led the committee to decide that it was advisable to study several unanswered questions concerning the anatomy and physiology of the muscles, before attempting any cooperative investigation relating to their pathology.

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[*] Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

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Accordingly, a series of twenty-four questions was drawn up with considerable care, and different groups of the members were asked to investigate these different points. The letter explaining more in detail the scope and the general outline of the work, is also attached with this report, and is marked Exhibit B. Several of the members did not find the questions which were assigned to them entirely of their taste, and were accordingly asked to take other questions for study.

In making these arrangements, the committee has therefore sent out about 850 of the first circular letter and 85 of the second circular letter, and in addition has written thus far about 130 letters.

As a result, however, we have now over 80 members who are studying with more or less exactness these different questions concerning the anatomy and physiology. It is probable that a number finding that any real work demands time and patience will promptly give up the effort; but it is also probable that some will persevere, and we shall be able in this way to establish a certain few underlying facts. These, with other data which we already have, will give a broader and firmer foundation for any study of the pathology of the muscles, which may be elaborated by members of our section or by others in the future.

EXHIBIT A

American Medical Association
Section on Ophthalmology

COMMITTEE ON THE COLLECTIVE INVESTIGATION OF QUESTIONS CONCERNING THE OCULAR MUSCLES

183 Delaware Ave., Buffalo, N. Y., December, 1908.

My Dear Doctor:—At the last session of the American Medical Association, Dr. Wilder, then the chairman of the Section on Ophthalmology, advocated the same system of collective investigation for that Section as had been adopted with advantage in other societies.

In acordance with that suggestion Dr. Alvin A. Hubbell, present chairman of the Section, has constituted the undersigned a committee for the collective investigation of questions concerning the ocular muscles. For the sake of uniformity this committee will not only select the question or questions for study, but arrange other details of the work. If sufficient interest is shown in the subject by members of the Section, various phases of different questions could be studied by different subcommittees. In any case, however, the results obtained by each individual would be kept separate. The object is not to deal with theories, but to collect FACTS, which are carefully observed and accurately recorded. As every ophthalmologist meets daily with unsolved problems concerning the muscles, perhaps some data can ultimately be obtained which would be useful to all, without great effort on the part of any one.

The committee hopes to keep the bibliography of the subject complete, and to make it useful to students whether they cooperate in this investigation or not.

The Section will probably confirm the action of the Chairman in making permanent these committees on special investigation. If that is not done, the work could continue just the same, and if the results are of any value, ample opportunity would be afforded for publication.

Instead of confining the effort to a few, it seems best to issue this circular letter inviting the cooperation of every one in the Section. Among the younger members, especially, there are probably many who have not only the time and energy, but the training necessary for such work.

If, therefore, you are sufficiently interested to cooperate, even to a slight extent, please answer the following questions, and mail them in the enclosed envelope before the middle of December.

Lucien Howe, Buffalo N. Y.
Howard F. Hansell, Philadelphia.
Edward Jackson, Denver.

1. Do you care to take any part in the proposed collective investigation of some question concerning the ocular muscles?
2. What suggestion have you to make if any, as to which aspect of the subject could be studied first to best advantage?
3. Have you any preference as to exactly which part of that question or any other you would like to have assigned to you?
4. Have you opportunities for work if desired, in some well-equipped laboratory? If so, is that physiologic, pathologic, ophthalmologic or of what kind?
5. Are you connected with any hospital or dispensary?
6. Have you access to a good medical library, or can you obtain books through some incorporated library, from the library of the Surgeon-General?
7. Have you an easy reading knowledge of German or French or both?

Name and Address..........................

EXHIBIT B

American Medical Association
Section on Ophthalmology

COMMITTEE ON THE COLLECTIVE INVESTIGATION OF QUESTIONS CONCERNING THE OCULAR MUSCLES

183 Delaware Ave., Buffalo, N. Y., January, 1909.

My Dear Doctor:—The committee on the investigation of questions concerning the ocular muscles wishes to acknowledge your reply, and that of many others, offering to cooperate in the proposed study.

The nature of these replies, with other considerations, have convinced the committee that it would be worse than useless to attempt to deal with phases of pathology or treatment, until we can first agree on certain propositions, still doubtful, concerning anatomy and physiology.

The following general plan has therefore been adopted, for the beginning:

1. A given question will be placed, if possible, in the hands of some colleague who has already studied it, or who has expressed a desire to study it.

2. Each colleague is expected to obtain cooperation from others, physiologists, chemists—any one, anywhere—only being certain that apparent facts are really facts, accurately observed and carefully recorded.

3. In physiologic experiments the term "normal eyes" will be understood as those whose manifest ametropia does not exceed 0.05 D., whose proximate point is in proportion to the age, the individual being in good health and entirely free from asthenopic symptoms.

Experience has shown that it is most convenient for a student of these questions to use his own eyes for experiment, if they are sufficiently near the normal type; if not, the eyes of some member of his household. Typical subjects for study can usually be found among soldiers (including members of the National Guard), or others who lead an out-of-door life.

4. For the sake of uniformity each subcommittee or individual is expected to report to the central committee, if requested, two or three times a year concerning the progress made.

5. As accuracy and truth are the prime considerations, it is not desirable to hurry to conclusions. But if a given piece of work in the hands of a subcommittee or of an individual lags unnecessarily, some one else will be invited to study that question.

6. A colleague can feel free to publish his work anywhere and at any time. But if it is to form a part of any report formulated by this central committee, then

A. The article must be in the hands of this committee at least four months before a meeting of this Section.

B. If it has been already published, only a brief abstract would be made of it—sufficient to show its value as a link in the chain of facts.

C. If it has not been already published, an abstract will also be made, but the communication, with abbreviations, if necessary, would be referred to the committee on publication, in order that it may form part of the Transactions of the Section.

7. The central committee, if requested to do so, will furnish references to the bibliography of the questions proposed by them.

If you wish to join in this investigation will you please inform the chairman of this committee before the — of January whether:

A. You will accept the suggestion to study the question given below; or

B. If you prefer some other question, please state what it is.

The central committee appreciates that many who promptly accepted the invitation expecting to make clinical observations, will not care to study first anatomy or physiology. The cooperation of such colleagues must therefore be deferred or unfortunately lost entirely.

But the favorable replies to the first circular letter have been sufficiently numerous, and from men of sufficient standing, to warrant the hope that those who do cooperate will be well repaid by the satisfaction of contributing a little to our knowledge, and by the honor of being connected with a work which may ultimately prove of some credit to American ophthalmology. Truly yours,

The Committee,
Lucien Howe, Buffalo.
Howard F. Hansell, Philadelphia.
T. B. Schneideman, Philadelphia.

Report of the Committee of Revision of the United States Pharmacopeia *

To the Chairman and Members:—Your committee takes pleasure in presenting the following report on the revision of the United States Pharmacopeia. Perambulatory, it may be remarked that the committee has restricted its work to such drugs as are generically termed "dental remedies."

PROPOSED ADDITIONS

General Anesthetics: Nitrous oxid gas in its pure state or combined with oxygen is by far the most used general anesthetic in dental surgery. On account of its relative safety and quick action, it is especially adopted for those cases of minor surgery in which a general anesthetic is indicated Liquid nitrous oxid gas and liquid oxygen are recommended for adoption in the U. S. P. Recently, various mixtures of general anesthetics which are principally composed of ethyl chlorid, methyl chlorid and ethyl bromid have been freely discussed in current dental literature. These mixtures are not recommended for admission to the U. S. P., as they offer no material advantage over pure ethyl chlorid. The latter drug has been admitted to the eighth decennial revision of the Pharmacopeia.

Local Anesthetics: Ever since the introduction of cocain as a local anesthetic, chemists have been busy looking for substitutes to overcome the many side-effects of cocain as pointed out to them by the clinicians. Of the many substitutes offered, the following are the most important ones: Alypin, anesthesin, the eucains, holocain, novocain, the orthoforms, stovain, tropacocain and chlorbutanol (chloretone). After a careful investigation of these various products, novocain (see New and Nonofficial Remedies) seems best suited for anesthetic purposes in dental surgery. It is five or six times less poisonous than cocain, absolutely non-irritating to the tissues and of an equal anesthetic power when combined with the alkaloid of the suprarenal capsule. For external application the orthoforms deserve to be recommended. On account of the relatively low poisonous nature of novocain, the latter may be successfully used as a substitute of the orthoforms. Novocain is to be recommended for admission to the U. S. P.

The addition of the alkaloid of the suprarenal capsule to local anesthetics has placed the administration of these latter chemicals on a comparatively safe basis. According to modern conception, rational local anesthetization of the oral tissues is safely and effectively accomplished by the combined action of the anesthetic and of an agent which produces local anemia. The alkaloid of the suprarenal gland is eminently suited for this purpose. Recently, a synthetic product has been introduced as a substitute of the natural alkaloid of the suprarenal capsule. The admission of the alkaloid of the suprarenal capsule or its synthetic substitute and their solutions is to be recommended to the U. S. P.

The Antiseptics: Among the modern organic metallic salts used as antiseptics, the silver compounds occupy a prominent place. Of the many preparations, only two are mentioned here, for the reason that they have shown real merit and that they are apparently more in general favor than the balance. They are protargol and argyrol. One or the other of these preparations is recommended for admission, the selection is left to the discretion of the proper committee of the revision of the U. S. P.

Among the many new compounds which evolve nascent oxygen, magnesium dioxid and sodium perborate deserve to be mentioned. Magnesium dioxid may be advantageously added as an antiseptic to tooth powders. Its advantage over other oxygen compounds (calcium or strontium dioxid, etc.) is obvious. Sodium perborate, when dissolved in water, furnishes an alkaline solution of hydrogen dioxid of a fairly reliable strength (with limitations).

Recently a stable 30 per cent. solution of hydrogen dioxid has been introduced under the name of perhydrol (see New and Nonofficial Remedies). It is free from acid and may be mixed with water in all proportions. For dental purposes, it is far superior to the concentrated ethereal solution of hydrogen dioxid and is comparatively free from danger. It is especially serviceable as a bleaching agent and as a caustic. Magnesium dioxid and perhydrol are recommended for admission to the U. S. P.

Trioxymethylen, a polymerized form of formaldehyd gas (see New and Nonofficial Remedies), has been employed in operative dentistry with so many gratifying results that it deserves to be recommended for admission to the U. S. P.

Soap solutions containing formaldehyd gas in definite quantities have been largely used as hand and instrument disinfectants and have proven to be very efficacious. These solutions have certain advantages over other solutions which are used for this purpose, viz., the compound cresol solution, as being comparatively odorless. A solution of this nature corresponding to veroform (see New and Nonofficial Remedies) deserve to be recommended for admission to the U. S. P.

The eighth decennial revision of the Pharmacopeia has admitted a preparation known as Liquor Antisepticus, apparently as a substitute for the many proprietary preparations of a similar nature. The taste of the official preparation is unpleasant, and, as taste is a very important item in regard to the continuous use of an oral antiseptic by the patient, the composition of the preparation should be changed. Your committee recommends that Liquor Antisepticus should be omitted from future editions of the Pharmacopeia and that an improved preparation should be added to the National Formulary, where it rightly belongs.

Styptics: The surgical treatment of dental hemorrhage does not differ from that which occurs in any other accessible part of the body. Nevertheless, we meet with cases in which the use of styptics is indicated. For such purposes, cotarnin hydrochlorid (stypticin) and cotarnin phthalate (styptol) (see New and Nonofficial Remedies) have proven to be of good service. These remedies are certainly superior to any other styptic to be found in the present Pharmacopeia and either one of these compounds deserves to be recommended for admission to the U. S. P.

Antipyretics and Antineuralgics: Of the many compounds which have been advocated as antipyretics and antineuralgics, acetylsalicylic acid, known as aspirin (see Notes on New and Nonofficial Remedies) deserves to be recommended for admission to the U. S. P.

Analeptics: A useful restorative agent in cases of collapse, syncope, etc., is validol, either alone or as validol camphorate, *i. e.*, a solution of 10 per cent. camphor in validol. (See New and Nonofficial Remedies.) Its usefulness has been frequently tested and it deserves to be recommended for admission to the U. S. P.

PROPOSED CHANGES

Shorter titles or synonyms should be given to the following drugs: Acetphenetidin, hexamethylenamin, sulphonethylmethan and sulphonmethan.

Your committee further recommends the adoption of the following resolution by this Section:

> Whereas, the Section on Stomatology of the American Medical Association is taking special interest in the Revision of the Pharmacopeia of the United States, and.
>
> Whereas, at present no provision is made for representation of the dental profession of the United States in the United States Pharmacopeial Convention, therefore be it
>
> *Resolved*, that the Section of Stomatology of the American Medical Association should be entitled to one delegate who represents this body on the Committee of the Revision of the United States Pharmacopeia.

Respectfully submitted,
Hermann Prinz, Chairman.

Thyroid Administration in Children.—L. Williams, in the *British Journal of Children's Diseases*, June, 1909, states that as thyroid insufficiency is characterized by a subnormal temperature and sensations of chilliness, it might be expected that thyroid excess would be accompanied by a supernormal temperature and intolerance of heat; and such is the clinical fact. Experience has taught him when giving thyroid extract to children over considerable periods of time that the thermometer is as necessary a guide as the weighing machine. So long as the subnormal readings persist, the drug may be continued; as soon, however, as the temperature reaches normal, caution is necessary; and at the first indication of a rise beyond normal, the drug may be suspended.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

Clinical Notes

STAPHYLOCOCCUS VACCINE IN INFLAMMATORY CONDITIONS OF THE GENITOURINARY ORGANS *

W. M. ROBERTSON, M.D.
ST. LOUIS

My attention was called to the staphylococcus vaccine by the following case:

Case 1.—*History.*—Mr. N. was referred to me in May, 1908, by Dr. M. B. Clopton. The patient was 18 years old, and had never had any venereal disease until the preceding November, when he contracted gonorrhea. From the time the disease first manifested itself, he had been treated by men both in St. Louis and New York City, who are well-known to be capable of treating such diseases. When I first saw him there was a profuse purulent discharge containing gonococci from the urethra; the first, second and third glasses of urine were so cloudy as to be termed milky; the prostate was enlarged, soft, sensitive on pressure and the expressed secretion contained only pus. There was present some frequency and urgency of urination.

Treatment.—I treated the patient for about three months according to the well recognized methods of treating such conditions, but met with no better success than had my colleagues who had previously treated him. So far as I could see there was absolutely no improvement in his condition, and I began to despair of being able to do anything for him. About this time he developed a suppurative folliculitis of the bearded portion of his face for the treatment of which he was referred to Dr. M. F. Engman. Ten days later, after having treated him to no avail for three months, and without any change in treatment, there was a marked improvement in his condition. In three weeks the urine was clear and in six weeks the patient was entirely well.

In speaking with Dr. Engman about the case, he told me that he had been giving the patient injections of staphylococcus vaccine. It then occurred to me that in these rebellious and obstinate infections of the prostate and bladder we have to deal, perhaps, with a staphylococcus and not a gonococcus infection; that while the gonococcus was the cause of the original infection after a time it lost its virulence and left to the staphylococcus the task of keeping up the disturbance which it had begun. This supposition was further strengthened by the fact that, while the gonococcus vaccine has been given an extensive trial in these conditions, few observers make for it any claim as a curative agent. Acting on this belief, I obtained staphylococcus vaccine to carry out my investigations.

At this time I had under treatment, or, more correctly speaking, under observation, at the genitourinary clinic of the Washington University the following patient:

Case 2.—*History.*—J. D., aged 20, laborer, contracted gonorrhea about one year ago, and was "cured" in four weeks. Three weeks ago, following some dissipation, but not having indulged in intercourse, the discharge again appeared. It became very profuse, but at the time when I saw him was slight and no gonococci could be found. Both glasses of urine were very cloudy; urination was frequent, painful, urgent and followed by much tenesmus. The prostate was much enlarged and painful and the secretion contained only pus. The patient was in destitute circumstances, his nights being spent in a box car or one of the city parks, and his meals were irregular and uncertain. His general condition was miserable, but on account of an ignorant prejudice he would not consent to go into a hospital.

Treatment.—I gave him the best treatment I could under the circumstances, but after two weeks his condition remained unchanged. I then began giving him hypodermic injections of staphylococcus (albus) vaccine, all other treatment being discontinued. The further progress of his case is as follows:

On August 29 and 31 and September 2 and 7 respectively 1 c.c. staphylococcus (albus) vaccine was given. At the end of this time the patient felt well, had no pain and no disturbance with urination. First glass of urine was cloudy, the second was clear, the prostate much diminished in size, and was not very painful on pressure.

On September 12 and 16 respectively 1 c.c. of staphylococcus (albus) was given. At that time he had no pain, no discharge, no disturbance with urination, both glasses of urine were clear, prostate was normal in size but the expressed secretion contained much pus.

On September 20 1 c.c. staphylococcus vaccine was again given.

On October 5 the patient had not returned for treatment as he had been feeling perfectly well. The urine was clear, the canal was free, the prostate normal in size, shape and consistency, and the expressed secretion was normal.

Case 3.—*History.*—E. D. first consulted me Oct. 15, 1908. He had contracted his first case of gonorrhea two months previously and on account of suppurative folliculitis had been in a hospital for two weeks. When I first saw him there was a slight discharge from the urethra containing gonococci; frequent urination, both glasses of urine being cloudy. The prostate was enlarged and the expressed secretion contained only pus. After having treated him for two weeks according to well-recognized methods of treating such diseases, his condition remained about the same. He then went away for a week and returned on November 7, complaining of pain in the right testicle and cord, pain in the back, frequent urination, in fact all the symptoms of impending epididymitis. He had to urinate every fifteen or thirty minutes and the urine was thick with pus. The prostate was enlarged and very sensitive.

Treatment.—I began the injections of staphylococcus vaccine, suspending all other treatment. After three injections, on November 7, 9 and 11 of 1 c.c. each, all of the subjective symptoms had disappeared. I then began prostatic massage and permanganate irrigations, injecting the staphylococcus vaccine every six days. This treatment was continued until December 21, when the patient was discharged cured.

Case 4.—*History.*—E. R. had had one attack of gonorrhea five years previously. On Oct. 28, 1908, two days after sexual and alcoholic dissipation, he developed acute prostatitis. Urination every ten or fifteen minutes, pain, urine very cloudy, prostate much enlarged and very sensitive. No discharge from the urethra.

Treatment.—I advised rest, hot sitz baths, opium and belladonna suppositories, and santal oil. This treatment was continued until November 7, with some relief, but the patient was still in great pain. I then discontinued this line of treatment and on November 7, 9 and 11 gave him 1 c.c. of staphylococcus vaccine. After the third injection all symptoms disappeared as if by magic. I then began prostatic massage and irrigations, giving the staphylococcus injections once a week. The expressed prostatic secretion was at first thick, yellow pus, but after continuing this treatment until December 21 it became almost normal and the patient has had no further trouble.

Case 5.—*History.*—F. D. first consulted me Jan. 4, 1909. He had contracted gonorrhea three weeks previously; first attack. When seen he had a profuse discharge containing gonococci, both glasses of urine cloudy, no disturbance with urination. He was treated by a hand injection of *protargol* and a preparation of santal oil. On January 23 he developed acute prostatitis. The prostate was enormously enlarged and very painful, urination every few minutes very painful and followed by much tenesmus. The discharge from the urethra had ceased.

Treatment.—Staphylococcus vaccine (1 c.c.) was administered, other treatment being discontinued. On January 25 1 c.c. staphylococcus vaccine was again injected. Condition about the same. Patient very uncomfortable. On January

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* Read before the Medical Society of the City Hospital Alumni, June 3, 1909.

28 1 c.c. staphylococcus vaccine injected. Patient felt much better; second glass of urine almost clear; had little pain. On February 2 staphylococcus vaccine, 1 c.c. The patient was perfectly comfortable, *no pain, urination about normal.* First glass of urine was slightly cloudy, second clear; prostate much reduced in size. Prostatic massage and irrigations were then begun, the staphylococcus vaccine being injected every five days. In two weeks both glasses of urine were clear, and with the exception of some pus in the expressed prostatic discharge, the patient seemed entirely well. On February 25 he was discharged cured.

Case 6.—*History.*—Mc. E. contracted gonorrhea three years before he consulted me, Feb. 8, 1909. He had been subject to frequent recurrences of gonorrhea and occasional attacks of acute prostatitis. He was a traveling salesman and had a physician in almost every town in several states. I had treated him a year previous for three weeks for an aggravated case of acute prostatitis with only indifferent success. When he returned to me this time he was in about the same condition as when I first saw him. No discharge from the urethra, urination every few minutes and very painful, prostate enlarged, painful and very sensitive on pressure.

Treatment.—I gave him three injections of staphylococcus vaccine, 1 c.c. each, giving the injections every other day. Two days after the last injection, the urine was perfectly clear, the first glass only containing a few shreds. Urination was normal and the patient felt perfectly well. The prostate was much reduced in size and there was little pain on pressure. The patient then left St. Louis and I know nothing further of the progress of the case.

I could report many similar cases, but the record of cases becomes tedious and, to my mind, does not prove as much as does the opinion of the observer as to the efficacy of a certain remedy. I have used staphylococcus vaccine in twenty cases of acute prostatitis and cystitis in which there had been a history of gonorrheal infection dating back from a few weeks to many years, and have not yet met with a case in which the subjective symptoms have not been relieved after the third injection, these injections being given every other day. If continued every five or seven days, with other appropriate treatment, my cases have gone on to complete recovery with surprising rapidity. I have used these injections along with other treatment in cases in which the only symptoms were pus in the expressed prostatic secretion and recurrence of the urethral discharge following dissipation or sexual excesses. I am uncertain as to their efficacy in these cases, but my experience leads me to believe that they are worthy of further investigation.

I have used them in cases of lesions of the spinal cord and in cases of senile hypertrophy of the prostate in which either retained and decomposed urine, or instrumentation or both had caused troublesome bladder symptoms. In these cases where the infection was due to the staphylococcus, as it has been in many cases which have come under my observation, the result has been gratifying to both myself and the patient.

In one case of tabes of fifteen years' duration with an old chronic inflammation of the bladder, which I saw in consultation with Dr. Given Campbell, recurring chills followed by high temperature, the general condition of the patient, and the condition of the urine indicated an ascending suppurative renal affection. The improvement following the injections of the staphylococcus vaccine was so prompt and so marked that I am undecided whether to attribute it to the injections, to a mistaken diagnosis or to chance. At any rate, after having been confined to his bed most of the time for seven weeks and presenting at this time every symptom and indication of a marked septic condition, nine days after the first injection was given, the patient's condition was such that we felt justified in allowing him to undertake a European journey. After the first injection, there were no more chills, and no more fever, and at the end of a week there was a marked improvement in the condition of the urine.

I have used them in one case of incipient renal tuberculosis in a patient who, with Dr. C. Fisch, I am treating with tuberculin injections and in which there was a marked staphylococcus infection. The ordinary urinary antiseptics aggravated the condition and I began injections of the staphylococcus vaccine. In less than a month Dr. Fisch reported a marked improvement in the urine, but whether this was due to the staphylococcus or the tuberculin, or either, I do not know.

It is my custom to give the injections every other day for three injections. I then give them every five or seven days as long as they seem to be indicated. I have used only the *Staphylococcus albus,* using at each injection 1 c.c., which represents 400,000,000 bacteria. I have given several hundred injections. I have never had an abscess following them, nor have I had a patient complain of pain or any bad after-effects.

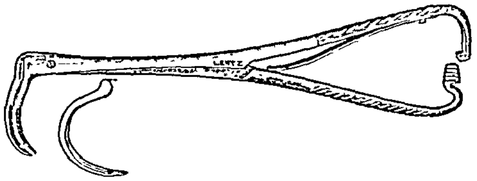
I hope that I am not overenthusiastic over the results which I have obtained by the use of staphylococcus vaccine. Acute inflammation occurring in cases in which an old gonorrheal infection existed may show the gonococcus or may not, but the staphylococcus is always present and, while the gonococcus was the original cause of the infection, I believe that after preparing the soil it lost its virulence and left to the staphylococcus the task of keeping up the mischief. It is in this class of cases only that I make an unqualified claim for the staphylococcus vaccine. In the other conditions in which I have used it, the small number of cases or other circumstances have prevented me from forming a positive opinion.

Humboldt Building.

A LIGATURE-CARRIER

CHARLES B. REYNOLDS, M.D.
PHILADELPHIA

The ligature-carrier here illustrated I have devised for ligations of the broad ligaments and deep pelvic vessels especially. The instrument is nine inches long and composed of two pieces, with a deep curve, each containing one-half of the eye of the needle. The handle is large, of the ratchet type, and contains a strong spring.



A new ligature-carrier.

The ligature material is threaded through the eye of the needle, which is passed beneath the vessels or ligament to be ligated; the ligature is grasped with the fingers or forceps, the handle compressed and the halves of the needle forced apart by the spring and withdrawn. This obviates the difficulty of drawing the ligature through the eye, as in the old-style pedicle needle. Any ligature material may be used without danger of cutting it.

2003 Diamond Street.

HAND CRUSHED: INFECTED WITH GAS BACILLUS OF MALIGNANT EDEMA

AMPUTATION OF FOREARM: RECOVERY *

G. PAUL LAROQUE, M.D.
RICHMOND, VA.

Were it not for the fact that the patient recovered from an infection which is alleged to be almost uniformly fatal, a single case report of an extremely rare infection would scarcely be worth while. On account of the fact, however, that patients infected by the so-called gas-producing bacillus of malignant edema nearly always die, even after the most radical and high amputations, a case of recovery following conservative treatment should be recorded.

Until the present case came under my observation I had seen only one case. This occurred in the practice of my former chief, Dr. Edward Martin, of Philadelphia. The patient was a young woman who suffered a compound fracture of the ankle and died within three days in spite of amputation at the hip joint. Another case occurred in the University Hospital in Philadelphia a short time before my period of service as resident surgeon in that institution, and this patient died in spite of high amputation. The following case is the only one I have heard of in Virginia in which the organism was demonstrated bacteriologically:

Injury.—R. C., a colored man, aged 32, while engaged in shucking corn with a machine on a farm about ten miles from Richmond, suffered a severe crushing of the left hand. He was at once referred by Dr. W. A. Campbell to Dr. Stuart McGuire's clinic at the Virginia Hospital. On examination of the injury by the resident surgeon, Dr. W. D. Carr, it was obvious that, on account of the extensive injury of the hand and wrist, amputation was indicated. I saw the patient about 8 p. m. of the day of admission. There was extensive mutilation of all the soft parts and bones of the hand and wrist and the tissues injured had already become black and obviously gangrenous. There was the characteristic gangrenous odor, and the hand and soft parts were infiltrated with gas to about two inches above the wrist. A diagnosis of gas-bacillus infection was at once made. A smear from the injured hand, examined microscopically by Dr. Guy Hopkins and Dr. G. H. Baerecke, showed the characteristic organism of malignant edema, together with some mixed infection.

Treatment.—Amputation of the middle of the forearm was at once performed by the resident surgeons, Drs. Carr and Booker, under my instruction. The next day the stump appeared black in color and a foul odor was emitted. Some of the bloody discharge from the stump was examined microscopically and the bacillus of malignant edema was found to be present. This caused us immediate alarm, and we at once took into consideration higher amputation. The patient's temperature was 103, pulse 120. In order to determine whether or not the infection was limited to the stump or whether it was being conveyed into the general circulation, we secured blood from the regional veins leading from the stump and also from the veins of the opposite elbow. Both of these specimens were submitted to the bacteriologists for examination, and in neither specimen was the organism present. Believing that consultation should always be held before any amputation is done, I called Dr. W. Lowndes Peple to see the patient. After discussing the matter for about half an hour, we concluded that, inasmuch as the patient's general condition was good and the local condition of the arm above the stump was good, higher amputation would not be justifiable. We therefore removed all the stitches and left the wound wide open to be treated with antiseptics and oxidizing agents, since it is a well-known fact that these organisms do not live in the presence of oxygen. Local applications of hydrogen peroxid, potassium permanganate and oil of turpentine were made to the raw surface and the stump enveloped with a dressing wet with 1 per cent. solution of chloral hydrate. The next day we made another examination of the blood leading from the stump and found it sterile. Two days later smears were made of the discharge from the stump and the bacillus of malignant edema was not to be found. The patient's condition remained good and recovery ensued as soon as could have been expected from a suppurating wound.

219 East Grace street.

EXFOLIATIVE NEONATAL DERMATITIS

J. C. MATTHEWS, M.D.
SPRINGFIELD, MO.

The object in reporting this case, which might be termed dermatitis exfoliativa prenatal rather than neonatal, is to call attention to the undoubted development of this disease, or condition *in utero.*

Ritter, in 1878, was the first to call definite attention to this condition; but in all cases reported by him and others since that time I failed to find a case reported as existing at birth. From two to five weeks after birth is given as the usual time of development of symptoms.

Patient.—Baby R., male, was born at term, Feb. 8, 1909; normal labor; weight was 6½ pounds; the child was well-developed and seemingly of good vitality, as he breathed and cried well.

Condition at Birth.—When the arms and hands were delivered I noticed an unusual condition of hands, and on careful inspection of child, after delivery, I discovered that the hands and feet were denuded of epidermis. This condition included the fingers and toes, except their tips, and back to the wrists and ankles. The nose, penis and margin of umbilicus were also denuded, appearing dark red, not unlike a burn of the second degree caused by steam or hot water. The lesions were exuding serum as would a burn, and shreds of cuticle were hanging at the margins.

Treatment and Course of Disease.—The child was dressed and put to breast, which it nursed in a normal way. The raw surfaces were dressed with boric acid and sweet oil. On February 9 I saw the child in company with Dr. Anderson; we found it in a weakened condition, its face pinched and drawn, the clothing and bandages saturated with serum, and with some bleeding from the nose and margin of the umbilicus. We also found, on dressing it, that the exfoliation had extended up the arms and legs for from one to one and a half inches, and in pockets under the cuticle a clear serum similar to a blister caused by a burn was found. During the past twenty-four hours the child had nursed a little, bowels had acted, urine had been voided, and the child had cried a great deal. Temperature was 97 in the rectum.

February 10: The child was much weakened, it had not nursed since the last visit. The clothing and bandages were saturated and stiff with serum and blood; the surface of the body was cold, skin was pale and wrinkled; breathing was shallow. The heart sounds were weak, and attempts to cry produced only a weak moan.

During the night the child died. No postmortem examination was made.

History of Parents.—The mother was a decided blond, well developed, weight 118 pounds, age 18. This was her first child. Labor and recovery were normal. History of herself and parents was good, though she sunburns easily. The father is a medium blond, aged 21, healthy and hearty; weight 145 pounds. There is no history of syphilis or hereditary disease on either side.

Purity and Digestibility of Foods.—"The first requisite which we should make for foods for invalids is that they should be pure. The next most important thing is to find a pure food which the invalid can digest."—H. W. Wiley in the *New York Medical Journal.*

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*Reported at the Richmond Academy of Medicine and Surgery, January, 1909.

Therapeutics

DIET IN TYPHOID FEVER

It seems almost impossible to settle this much discussed subject definitely, and it is doubtful if it ever will be determined that any one diet is the only correct one for typhoid fever. The patient, his dietary habit, and his ability to digest certain foods during typhoid fever must all be individualized. Therefore, a diet correct for one patient may be absolutely incorrect for another.

The recommended diets vary from nothing but water, or no diet, through absolute milk, entire absence of milk, liquid foods other than milk, cereal foods, to actual solid foods, including meat.

The diet in typhoid fever should never be discussed without due consideration of the management of the bowels. This means whether diarrhea should be allowed, whether laxatives should be given, or whether constipation should be caused.

In the first day or two of the fever the temperature is likely to be higher than it is on the days that immediately follow. This temperature is lowered, the tongue improved, and the patient made generally better by free purging, and a diet of little more than plenty of plain water. The purgative selected may be calomel, or may be castor oil administered in some pleasant form. Such a purgative may be repeated in two or three days if deemed advisable. There can be no question that a clean alimentary canal modifies greatly the severity of the early typhoid symptoms.

It has been lately shown that fecal deposits, seeds or other food débris may become lodged in the lower corner of the ascending colon, the cecum, and may cause inflammation or symptoms of appendicitis, and may even be a subsequent cause of appendicitis. Hence it may be found to be good treatment, in the first few days of typhoid fever, to give colon enemas of from one to two quarts of warm water, the patient lying on his right side, to aid in washing away the possible accumulations in the cecal region. Such colon washings can certainly do no harm in the first days of typhoid, and may be of marked benefit in the future course of the disease. In other words, the more thoroughly the pathologic process in the intestines, in typhoid fever, is considered from a surgical standpoint, with the aim to keep these ulcers and the inflamed intestinal mucosa as clean as possible, the less will there be secondary infection, the less will there be tympanites, the less will there be deep ulcerations, hemorrhages and perforations, the less high the fever, and the better the whole prognosis. Consequently, not only should the bowels be cleared at first, but subsequently the bowels should be moved daily. This is best done by administering every other day some gently acting saline laxative, which cleans the upper part of the intestines, tends to drain the portal circulation, to keep the liver, our Pasteur filter, in a healthy condition, and to cause an easy watery movement. Any tendency to a diarrheal condition or to too many movements from such a laxative may be stopped by the administration of 1/10 grain of morphin. The bowels are thus cleaned and subsequent excessive peristalsis inhibited, and the patient is generally at rest for the remainder of the day. On the alternate day a small glycerin enema, administered with a glass syringe, consisting of a tablespoonful of glycerin and a tablespoonful of water, will cause within ten minutes a movement of the bowels that will at least empty the descending colon and cause the expulsion of gas. Such management of the bowels seems contraindicated only by intestinal hemorrhage, signs of perforation and great prostration. Such treatment also prevents secondary infections that keep the temperature high. In other words, less antipyretic measures are needed, if the abdomen is flat, tympanites is not present, and the patient's bowels have moved daily artificially, and the movements are not caused by diarrhea due to irritation from the disease.

The fact should be emphasized that tympanites is not a symptom of typhoid fever, but is a symptom of mismanagement, a symptom of a mistake either in the diet or in the management of the bowels. Tympanites not being present, the danger from hemorrhage and perforation is reduced to a minimum. If the patient's bowels are properly managed in typhoid, tympanites will rarely occur.

As above stated, the exact diet that is best for the individual typhoid patient must be determined by his ability to digest, by the height of the temperature, by the behavior of the stomach (i. e., whether there is distress, nausea, or vomiting), by the amount of intestinal flatulence, and somewhat by the character of the stools. Any food, however advantageous theoretically, or however satisfactory for other patients, is contraindicated if it causes indigestion in any form, or is not digested. Theoretically, the food that causes the least mass of intestinal débris would be indicated on account of the less likelihood of food that is almost entirely digested in the upper alimentary tract forming a favorable medium and mechanical protection for pathogenic germs in the lower intestine. For this reason large amounts of milk would seem to be contraindicated, and certainly the all-milk diet is not the best for most patients who have typhoid fever. On the other hand, milk is too good, simple and generally well-digested a food for its use to be condemned in this disease. A solid diet as advocated by some, also, seems generally inadvisable. When it is considered that both high temperature and nervous disturbance caused by the disease, and also the general depression of the system, cause an interference with the production of normal gastric juice, food that requires normal conditions for digestion would seem to be contraindicated. Therefore, ordinarily a mixed diet representing the different elements of nutrition needed to protect the system against drain and loss and consequent unnecessary debility, the so-called typhoid state, and a diet that is varied sufficiently to prevent the patient from dreading the feeding hour is the one indicated. Any nutrient that is abhorrent to the patient should not be administered, as it is well understood that the digestive secretions are not produced so well when the patient dislikes, or is disgusted by, a food.

A good mixed diet for twenty-four hours, suitable for an ordinary adult ill with typhoid fever, is represented by one pint of milk; two eggs, or the whites of three eggs; one cup of thoroughly cooked, thin oatmeal gruel; the juice expressed from a pound of chopped, round steak; a small cup of coffee, in the morning; a small portion of wine, orange, or lemon jelly made from gelatin; and enough salt and sugar in the above to make them palatable.

The milk may be administered, hot or cold, with or without salt, with or without Vichy, with or without lime water, in two or three doses, as deemed best in the individual instance. Sometimes koumys makes a valuable substitute for ordinary milk. Sometimes buttermilk may be used, and this in larger quantities.

The eggs may be given raw, beat up with a little milk, or given with lemon juice on cracked ice, may be poached, or, if the temperature is not high, soft boiled or in the form of boiled custard.

The oatmeal gruel should generally be made with milk, and thoroughly cooked, strained, and salted to suit the taste.

Meat juice is best prepared by just covering the chopped steak with water, and allowing it to stand for an hour and a half. The water and juices are then expressed out of the meat. This watery extract will then contain, besides the blood of the meat, actual muscle serum, which is a decided tonic, especially to the heart. This expressed fluid is then kept on the ice and administered, properly salted, in two or three doses.

While gelatin is generally pleasant to most patients, it also has some nutritive value, and possibly tends to aid normal coagulation of the blood, and perhaps prevent capillary bleedings from the inflamed intestines.

A patient who is accustomed to his morning coffee need not be deprived of that pleasure because he has typhoid fever, unless there are meningeal symptoms, or meningitis is actually present.

If for any reason it seems inadvisable to administer meat juices to typhoid patients, and surely, if the patient is anemic, one or two doses of iron in the twenty-four hours should be given. The iron may be administered in five-drop doses of the tincture of the chlorid, in lemonade, once or twice in twenty-four hours; or a three-grain saccharated oxid of iron tablet (*Eisenzucker*) once or twice a day, or a capsule containing three grains of carbonate of iron, or reduced iron, may be administered once or twice a day.

The constant object in mind should be to administer protein (meat, eggs, milk), carbohydrate (oatmeal, sugars, or something similar), alcohol if deemed advisable, a mild cerebral stimulant (coffee or tea if thought advisable), iron, calcium (gelatin or lime water), sodium chlorid (perhaps dilute hydrochloric acid later), and water, enough of all to keep the physiologic processes as near normal as possible, while the patient is going through the long, tedious, feverish illness.

Experience seems to teach that it is best to administer nutriment to the typhoid patient in small amounts at three-hour intervals. It should, however, be arranged that the patient has normal rest. In other words, he should not be awakened from a comfortable sleep because it is time to do something to him or for him, and at regular three-hour feeding intervals should be the periods at which he is to be disturbed for other treatments. During the night, if he is not seriously ill, he should not be disturbed as often as every three hours.

With the treatment outlined, and with proper care of the mouth, the patient's tongue is rarely badly coated and should be moist, there should be no nausea, and there should be no tympanites.

The question that constantly arises in conjunction with the nutrition in typhoid fever is of what value are the so-called intestinal or bowel antiseptics. It is certain that the lower part of the small intestine can not be rendered aseptic. It is also just as certain that the stomach and a short distance at least of the small intestine may be made uninhabitable for pathogenic germs, without poisoning the patient. Perhaps the best stomach antiseptic is gastric juice, containing its normal amount of hydrochloric acid. If the hydrochloric acid is insufficient, pathologic germs may be present in the stomach, and certainly are likely to be present in the duodenum. Therefore, if it is considered in typhoid fever, at any period, that the hydrochloric acid is insufficient, a few drops of the dilute acid may be administered several times a day. If sodium chlorid is normally supplied to the patient, except possibly in the latter part of the fever, the hydrochloric acid is probably normally present, and except for the advantage of compelling the patient to drink more acidulated water, the necessity of administering hydrochloric acid is perhaps doubtful. Certainly a too acid stomach is not desirable.

Various preparations have been offered for intestinal antisepsis which contain an extra molecule of oxygen, or are really peroxid preparations. These are also taken with large quantities of water and probably do a great deal of good.

The best antiseptic to the upper part of the intestines seems to be salicylic acid in some form, and one of the best forms is the combination with phenol, viz., phenyl salicylate (salol), which may be given in capsules without any disturbance of the stomach, as it is there undissolved and breaks up into its component parts of salicylic acid and phenol in the duodenum. A small dose of this drug (0.25 gram or 4 grains) every six hours may be given continuously through the disease, unless there is a diminished excretion of urine, or albuminuria develops, or the urine shows darkening from the phenol, which would be very rare from this sized dose. Even the non-believers in bowel antiseptics must admit that whether the colon bacilli or typhoid bacilli come to the upper part of the intestine by migration, or reach these regions through the blood stream, that it would not be so healthy for them provided salicylic acid was present in the upper intestine as though it were not present.

How good a bowel antiseptic hexamethylenamin (urotropin) is has not been determined, but in post-typhoid conditions when typhoid bacilli or colon bacilli may be present in the pelvis of the kidney or may be present in the gall bladder, it has been shown that administration of hexamethylenamin is the best treatment to prevent their remaining permanently and causing inflammation in these regions.

Thus far sour milk treatments, lactic acid germs and the administration of yeast have not been mentioned. Certainly bowel infections of most kinds are made better by the administration of yeast. The value of sour milk treatments in typhoid fever must be determined by experience. A patient, however, who is not doing well on the diet above suggested should be put on the sour milk treatment. One of the principal objections to such treatment is that the patient's stomach soon objects to any one diet that is to be long continued, although for a few days he might accept the soured milk. On the other hand, most patients do not object to the sour drink produced either by a tablespoonful of upper brewer's yeast in a glass of water, or by the solution of a five-eighths inch cube of a compressed yeast cake in a glass of water, given two or three times a day.

Portable Shower Baths.—A simple way of providing shower baths for the multitude has been in operation in Baltimore. On open lots tents were divided by cloth into sections for towel-room, waiting-room, dressing-room, and several bath compartments. There was a wooden floor and a wood frame carrying water-pipes and shower-heads with regulating valves within the reach of the bather. Drainage was provided to the street gutter. This outfit cost about $150. It could be maintained for $25 a week, including two men attendants. Later, portable wooden bath houses covered with galvanized iron were used, and hot water supplied from a small coal stove with a water jacket and a tank.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

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SATURDAY, SEPTEMBER 4, 1908

USING THE DAYLIGHT

Human nature has a curious tendency, once started in a wrong direction, to continue by inertia until something untoward turns up to modify the tendency or until some definite movement is organized to prevent further progress that may be serious. There are many illustrations of this principle, though perhaps the well-known tendency of the so-called middle C of the musical scale furnishes the best known example. Theoretically this should have 256 double vibrations a second. Instruments were gradually tuned higher and higher, however, making it more and more difficult for the human voice to reach notes that had been reached with comparative ease before, until a definite movement was organized to prevent further heightening and even then the tendency was not entirely overcome. We are in something of the same condition of affairs as regards light as is thus illustrated in sound. When illumination was poor, people went to bed shortly after nightfall and arose at daybreak. As illumination has become better, they have gone to bed later and later, especially in the cities; and the hour of rising has grown later until, in the summer at least, many persons sleep as much during daylight as in the dark.

This is of course unfortunate. Sleep is never so restful—at least for most persons—during the hours of light as when it is dark. Everyone knows this from personal experience. The old saw was that two hours of sleep before midnight were worth twice that amount afterward; and while this may not be literally true, the truth in it is that if sufficient sleep is to be obtained after midnight, then much of it must be secured after darkness has ceased when sleep is not so beneficial. Everywhere one hears the complaint that people are becoming more nervous and are losing the power to rest thoroughly. Undoubtedly, some of this—probably much more than we suspect—is due to the fact that so much of sleep in city life where the increase in nervousness is particularly noticeable must under present conditions be obtained during hours of daylight. Even though most individuals do not get up, some of the workers must be about their duties, so that while the sleeper's eyes are disturbed by light, his ears are vexed by noises; and, though the light and sounds may not actually wake him, yet they make sleep a much less complete refreshment of tired organs.

There is excellent reason, then, for welcoming the movement of the National Daylight Association, which is endeavoring to secure, as we have noted[1], more daylight for work and more of the night for sleep. A practical method for the first step in this direction is outlined in the bill introduced into the British parliament, which proposes to set all the clocks of the kingdom forward an hour in May and to change back again in October.[2] A similar bill, as we have said,[1] is before the Canadian parliament and seems likely to become a law. The movement has attracted much less attention in this country, but it is needed here above all. Some time ago we deprecated the foundation of a day-and-night bank, open every hour of the twenty-four, because this made a definite precedent for the extension of business hours beyond the legitimate time. Men may apparently accomplish more work by crowding some hours of the night with it, but they draw drafts on time that are sure to be presented by Nature, often with no days of grace; and in the end it is probable that their actual capacity for business is shortened.

There are many reasons besides those that we have suggested why physicians should interest themselves in the new movement. Undoubtedly the ever-lengthening use of eyes under artificial light is the main cause for the growing number of people who must use spectacles at ever-earlier years. While a definite effort is still made in cities to send children to bed early, this is not nearly so successful as it used to be, and bedtime for them is advancing as for adults. This is one reason why more city children need spectacles and nerve tonics, for their sleep is even more likely to be disturbed by the light in the morning than that of their elders. In a word, we have very probably in this movement for prolonging the usefulness of daylight one of the most important hygienic ameliorations that can now be made for all classes of people. Doubtless the working classes would benefit even more than most others, because, while their fatigue requires them to go to bed early, the activity of life around them often seriously disturbs their sleep during the hours before midnight which should be so precious. Let us hope that so simple and efficient a means of lessening one of the unhygienic tendencies of our day will receive the consideration it deserves.

HEXAMETHYLENAMIN AS A PROPHYLACTIC

The knowledge that the gall-bladder may become a habitat for *B. typhosus* and account for "chronic bacillus-carriers" has stimulated considerable search for a drug which will disinfect the biliary passages. Studies of Mosler, Meder, and Vieillard have shown that certain substances like potassium iodid, sodium salicylate, and mercuric chlorid are excreted in the bile, but none is excreted in concentration sufficient to be serviceable.

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[1] THE JOURNAL A. M. A., July 31, 1909, lii, 383, 387.

[2] THE JOURNAL A. M. A., July 25, 1908, li, 324, 328.

Crowe, in 1908, chose hexamethylenamin for his experiments because (1) of its known effect on typhoid bacilluria (Richardson; Churchman) and (2) of its easy recognition. Crowe's experiments on dogs showed that the drug, administered by mouth, was rapidly absorbed and remained in the circulating blood in recoverable amounts for twenty-four hours. He found it in the bile, secreted not only by the liver, but also, in even larger amounts, by the way of the gall-bladder itself.

Applying these results therapeutically in a number of human cases of postoperative biliary fistulas, he determined by careful bacteriologic and chemical study that, if the dose by mouth be large enough (75 grains per diem), the bile is rendered sufficiently antiseptic to inhibit the growth of bacteria. He then recommended its use (1) in acute infection of the gall-bladder, (2) as a prophylactic before gall-bladder operations, and (3) to lessen the occurrence of gallstones and also of chronic bacillus carriers after typhoid fever.

During his work Crowe demonstrated the presence of the drug in the bile, synovial fluid, saliva, pleural fluid, circulating blood, and cerebrospinal fluid in man after administration by mouth. Recently (1909) he has published the results of a series of experiments attempting to overcome artificial meningeal infections by hexamethylenamin. In forty experimental observations the animals received the drug before infection. Many survived, and the others lived longer than animals receiving it after inoculation, and much longer than the controls to which the drug had not been given.

In man he found the hexamethylenamin present in amounts sufficient markedly to inhibit the growth of organisms inoculated in the cerebrospinal fluid removed by lumbar puncture. In one case purulent meningitis from an infected cerebrospinal fistula cleared up under its use.

Apparently Crowe has thus shown that hexamethylenamin will do also for the cerebrospinal fluid what it has been known to do for the urine. He recommends its administration (1) in cases of fracture of the skull, (2) in cases of gunshot wounds of the head, (3) as a preliminary to ventricular and lumbar puncture and to spinal and cerebral operations, and (4) in cases of extracranial infections where extension to the meninges is feared, as in otitis media and suppurations of the sinuses. Should it prove as preventive as is hoped it will be a boon to the ear and nose specialist and a most important advance will have been made in the field of prophylactic therapeutics.

A POISONOUS HAIR DYE

On another page[1] in this issue we record three more cases of poisoning from the use of a preparation known as Mrs. Potter's Walnut Juice Hair Stain. This makes eight cases that have been reported to THE JOURNAL within the past six months. It would seem that the time is about ripe for some action to be taken either by state or federal authorities to limit or prevent the further sale of a preparation which has proved dangerous. According to the chemists of the North Dakota Agricultural Experiment Station, this hair dye depends for its action on paraphenylene diamin, a substance which when oxidized by means of a solution of hydrogen dioxid becomes an intense black. The poisonous qualities of this substance have been long known. Eighteen cases of poisoning have been recorded by Cathelineau,[2] who has reported somewhat exhaustively on the subject. Its physiologic effects have been studied by Laborde and Mellière[3] and also by Dubois and Vigum.[4] Hypodermatically administered to dogs, it produces tenesmus, diarrhea and salivation, followed by lowered temperature, opisthotonos and death in from ten to twenty hours. In Mellière's patient the urine was mahogany-colored, though apparently this effect is not always produced. The dermatitis caused by paraphenylene diamin is not always a light attack. L. Brocq[5] described a severe form in which the glands are affected, there is high fever, with a violent eruption and extensive desquamation. A case of poisoning has been reported by Balzer[6] due to wearing hose which had been dyed with the chlorate of paraphenylene diamin. A case of dermatitis from the use of a hair dye having as its base the hydrochlorate of paraphenylene diamin was reported at some length by A. D. Mewborn,[7] who gave a bibliography of cases of poisoning due to the drug and described at some length the preparation, reaction and method of use. The dangerous character of this chemical should in itself be a sufficient reason for controlling its indiscriminate sale to the laity. If Mrs. Potter's Walnut Juice Hair Stain depends for its action on paraphenylene diamin instead of on walnut juice, this fact alone plainly constitutes misbranding within the meaning of the national Food and Drugs Act. To the advertisements of the preparation which state that it "contains no poisonous dyes" the eight cases reported in THE JOURNAL give the "lie direct."

RECONSTRUCTION OF THE BILE DUCTS

Dr. Sullivan's article in this issue giving an account of the ingenious operation which he has contrived and of which he has experimentally demonstrated the feasibility, seems worthy of some special notice. The utilization of the peristaltic tug in the intestines to remove by that route the foreign body, the rubber tube used in restoring the bile passage, is a novelty. Should the further observations on the experimental animals prove that it is not followed by any serious symptoms or complications it may be recommended for practical use in suitable cases in the human subject. The dangers as they appear to us would be in properly securing against leakage in the peritoneal investment, or the too premature expulsion of the rubber tube before the tissues of the new channel have become properly adapted to their new function. These risks, however, seem to be negligible ones in the dog and, so far as purely experimental methods can be trusted, the operation seems likely to be a success. Whether the principle of attaching a sponge and using the peristaltic action of the intestines to complete the operation for internal drainage has any wider application or not does not matter—it appears certainly to be an advance in the surgery of the biliary tracts. As Dr. Sullivan says, the other steps in the operation are more or less already accepted details.

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[1] Queries and Minor Notes Department, p. 809.

[2] Ann. dermat. et de syph., 1898, p. 63.
[3] Tribune méd 1901, pp. 172 and 193.
[4] Arch. de physiol. norm. et path., 1898.
[5] Bull. méd., 1898, p. 237.
[6] Ann. dermat. et de syph., 1898, p. 683.
[7] THE JOURNAL A. M. A., May 18, 1901, p. 1389.

Medical News

CALIFORNIA

A Case of Bubonic Plague.—The first case of bubonic plague to be discovered in the state for a year was discovered in Alameda county August 6. The patient, a boy of 13, is supposed to have contracted the disease through handling infected squirrels killed by him on a hunting trip. In consequence of this case, there is renewed activity in the campaign of extermination against the ground squirrel.

Personal.—Dr. Charles C. Stephenson, formerly secretary and president of the Arkansas Medical Society, and professor of ophthalmology and otology in the College of Physicians and Surgeons, has left Little Rock on account of ill-health and located in Los Angeles.——The degree of LL.D. has been conferred on Dr. Francis M. Pottenger, Monrovia, by his alma mater, Otterbein University of Westerville, Ohio.——Dr. George H. Fay, East Auburn, has been appointed local surgeon for the Southern Pacific Railway.——Dr. Lulu H. Peters has been placed in charge of the pathologic work at the Los Angeles County Hospital.——Dr. Antoinette M. Bennette, San Bernardino, has accepted the position of resident physician and superintendent of nurses at the San Bernardino County Hospital.——Dr. Philip V. K. Johnson, city physician of Los Angeles, has resigned.——Dr. Gustave Wilson, first assistant physician of the Southern California Hospital for the Insane, Patton, has resigned.——Dr. David Gochenauer, San Diego, who has served as general manager of the Angelus Hospital, Los Angeles, for a year and a half, has returned to his home in San Diego.——Dr. Charles F. Wade, Los Banos, is reported to be critically ill.——Dr. Wallace I. Terry, chief surgeon of the San Francisco Emergency Hospital Service, announces that he will resign in October.——Dr. J. B. Rogers has been appointed a member of the Alameda Board of Health.

DISTRICT OF COLUMBIA

Personal.—The Cross of the Legion of Honor has been conferred by the French government on Dr. Harvey W. Wiley, chief of the bureau of chemistry.——Dr. G. Lloyd Magruder is the representative of the departments of state and agriculture at the International Medical Congress, Budapest.

ILLINOIS

Personal.—Dr. Lewis A. McFadden, Peoria, who was operated on recently in St. Francis' Hospital for intestinal obstruction, is reported to be improving.——Dr. Edward Hasson, Peoria, was operated on for appendicitis, August 10, at the Proctor Hospital.——Dr. Charles W. Gould, Fairdale, has started for the west and will later go abroad.——Dr. John M. Phifer, Stewardson, has been appointed assistant surgeon of the Atchison, Topeka and Santa Fe Hospital, Topeka, Kan.——Dr. Henry M. Bascom, Ottawa, has been appointed chief surgeon of the Illinois Traction System and of the hospital association of that system.——Dr. Olof Nordvall, Rockford, has returned from Europe.——Dr. Daniel W. Gross, Watseka, has been made a member of the Iroquois county board of U. S. pension examining surgeons, vice Dr. Robert Lumley, deceased.——Dr. and Mrs. R. Jay Atwood, Paxton, sailed for Europe August 11.——Dr. W. E. Taylor, superintendent of the Watertown State Hospital, has been granted six months' leave, becoming effective August 1.

Chicago

Day Nursery Opened.—The Clara Palmer Goetzinger Free Day Nursery of the Esther Falkenstein Settlement House, which will accommodate more than 100 babies, was opened August 16.

Outdoor School.—The first week of the operation of the Outdoor School for Tuberculosis Children showed gratifying results. About thirty of the children of the stock-yards district availed themselves of the opportunity, and they not only derived physical benefit, but obtained ideas regarding hygiene which should benefit them after the closure of the school.

Milk Examination.—During the week ended August 28, bacteriologic examination was made by the health department laboratory of 144 samples of milk and ice cream. The average bacteria count of raw milk was 6,660,290, and of pasteurized milk 378,300; in other words, the raw milk contained 139,600 more bacteria to the drop than the pasteurized milk. The ice cream averaged 10.537,915 bacteria to the cubic centimeter.

Medical Research Institution Founded.—The widow of Nelson Morris has given $250,000 for the erection and complete furnishing of the Nelson Morris Memorial Institution of Medical Research, to be connected with Michael Reese Hospital. The building will be constructed according to the ideas of Dr. James W. Jobling, pathologist of the hospital, and recently pathologist at the Rockefeller Institute. He will also direct the scientific work of the institution.

Personal.—Dr. Anton J. Carlson has been appointed associate professor of physiology, and Dr. H. Gideon Wells, assistant professor of pathology in the University of Chicago.——Dr. and Mrs. Fenton B. Turck and Dr. Louis L. McArthur have gone abroad.——Dr. G. N. Wassom has moved to Oelwein, Iowa, and has been appointed local surgeon for the Chicago Great Western Railroad.——Dr. Truman W. Brophy fell in his room in Berlin, August 19, and sustained painful injuries.

MARYLAND

Personal.—Drs. William J. Todd, Mount Washington, L. Gibbons Smart, Lutherville, and J. H. Jarrett, Towson, have been appointed censors of the Baltimore County Medical Association.——Dr. Henry L. Naylor, Pikesville, has been appointed a member of the State Commission on Pure Food, and on the subcommittee to draft a pure food law.

Prevention of Ophthalmia of the Newborn.—Mrs. Joseph Colt Bloodgood, Baltimore, secretary of the new Maryland Society for the Prevention of Blindness, has issued a circular which has been sent to all physicians in the state, asking them to pledge themselves to use some approved method of prophylaxis of ophthalmia neonatorum in their obstetric practice. The circular states that one-fourth of the blindness of children and one-eighth of all blindness is due to ophthalmia neonatorum.

Baltimore

Death from Pellagra.—A woman, aged 52, from Washington, D. C., died at Mercy Hospital, Baltimore, August 21, from pellagra. This is the third case of the disease observed in Maryland.

Cholera Ship on the Way.—Considerable anxiety exists in health circles over the announcement that the steamer *Andyk* from Rotterdam, a port infected with cholera, sailed for Baltimore August 25, and is due September 8. So far as known no case of cholera existed on the ship at the time of leaving port.

New Wards.—A new ward to cost about $140,000 is to be constructed at Bayview Asylum. It will be four stories in height, constructed of brick and re-enforced concrete, will be fireproof, and will contain a gymnasium and dormitory.——A new building is to be erected by the Church Home and Infirmary for a nurses' home and ward for children, at a cost of about $25,000. The building will accommodate from forty to fifty nurses.

Personal.—Dr. Percy M. Dawson, associate professor of physiology in Johns Hopkins Medical School, has resigned to take up the study of theology.——Dr. E. A. Erlanger has been made associate professor of physiology and Dr. C. D. English has been promoted to fill the vacancy caused by Dr. Erlanger's promotion.——Dr. Thomas C. Worthington has sailed for Europe.——Dr. John Doyle, interne at Mercy Hospital, was operated on for appendicitis at that institution, August 18.

MASSACHUSETTS

Personal.—Dr. and Mrs. Richard C. Cabot, Boston, have sailed for Scotland.——Dr. Samuel A. Green, formerly mayor of Boston, was overcome by the heat, August 9, and fell and sprained his ankle.

Tuberculosis Camp Opened.—Prendergast Tuberculosis Camp at Mattapan opened August 6, for the reception of patients. The camp comprises twenty acres, on which has been erected a large one-story wooden building, equipped with electric lights shower bath, dormitory and refectory, accommodating 12 men and 20 children. The children stay at the camp during the day, and the sleeping accommodations are for former sanatorium patients who have been discharged as cured, but wish to continue the open-air treatment. Once a week the children are sent to the Boston City Dispensary for examination.

MICHIGAN

Peninsula Physicians Meet.—At the annual session of the Upper Peninsula Medical Society, held in Calumet August 4, Sault Ste. Marie was selected as the next place of meeting, and the following officers were elected: President, Dr. Edward T. Abrams, Dollar Bay; and vice-presidents, Drs. Robert B. Binnie, Sault Ste. Marie, and John MacRae, Calumet.

State Society Meeting.—The Michigan State Medical Society will hold its annual meeting at Kalamazoo, September 15 and 16. The Kalamazoo Academy of Medicine will act as host of the organization. The general meetings will be held in the Congregational church, and the house of delegates will hold its session in the rooms of the Academy of Medicine. Dr. Archibald Church, Chicago, will deliver an address on "Mind Cures in General and Emmanuelism in Particular."

MISSOURI

Demands Clean Cars.—Governor Hadley has sent a letter to Dr. Albert H. Hamel, St. Louis, president of the State Board of Health, requesting that the board confer with the general managers of the railways in the state for the purpose of obtaining compliance with such sanitary regulations as he deems it advisable to adopt.

Personal.—Dr. Wilson J. Ferguson, Sedalia, has been appointed examining physician for Pettis county for the Missouri State Sanatorium.——Dr. Frank B. Hiller, Kahoka, has been elected secretary of the State Board of Health, vice Dr. James A. B. Adcock, Warrensburg, resigned.——Dr. John A. Riley, Fulton, has been appointed first assistant physician of the State Hospital, Patton, Cal.——Dr. William J. Calvert, Columbia, has been appointed professor of medicine in the Baylor University College of Medicine, Dallas, Texas.

NORTH CAROLINA

Personal.—Dr. John T. Battle, Greensboro, who was operated on for appendicitis at St. Leo's Hospital, is making a good recovery.——Dr. Chalmers M. Van Poole, Craven, has been elected president of the Rowan Farmers' Mutual Insurance Company.——Dr. Andrew W. Goodwin, Raleigh, who was recently suspended from the Wake County Medical Society, has resigned as professor of diseases of the skin and of the genito-urinary system in the University of North Carolina Medical School, and also as professor and demonstrator of anatomy in the Leonard Medical College in the same city.——Dr. Henry B. Marriott, Battleboro, has been appointed director of the State Hospital for the Insane, Raleigh, vice Dr. William H. Whitehead, Rocky Mount, deceased.——Dr. William W. Stancell, Margarettville, has been elected assistant physician at the State Hospital for the Insane, Raleigh, vice Dr. Charles L. Jenkins, Raleigh, transferred as physician in charge of the epileptic group or colony building.——Dr. William J. McAnally, High Point, is seriously ill from the bite of a poisonous spider.

NEW YORK

Personal.—In the recent fire at Monticello the home of Dr. John F. Curlette was entirely destroyed.——Dr. Nathan E. Beardsley, Dunkirk, was seriously injured in an automobile accident recently.——Dr. A. C. Kniskern has been elected president of the board of education of Mechanicsville, vice Dr. Walter C. Crombie.

Objections to Water Pollution.—Dr. Eugene H. Porter, State Commissioner of Health, announces that there are three reasons why there should be no pollution of the state's natural water courses—the protection of public health, the prevention of public nuisances and the safeguarding of riparian rights. In general, he is of the opinion that the greatest damage to riparian rights and the most widely felt interference with the use of streams for manufacturing and agricultural purposes results from the discharge of untreated industrial waste rather than from the discharge of domestic sewage.

Tuberculosis Campaign Bringing Results.—The war against tuberculosis in New York State is beginning to show results. ——Dr. E. H. Porter, State Commissioner of Health, has authorized the establishment of a camp at East Bloomfield, Ontario county.——Rochester is to have a city hospital.——Yonkers is doing creditable work for its tuberculous.——Ontario county has made an appropriation for a tuberculosis hospital.——Ex-Governor Odell has endowed a hospital for Orange county at Newburgh and Elmira has received a similar donation from Mr. and Mrs. Rapelyea.——Poughkeepsie has a model day and night tuberculosis camp.——Buffalo and Rochester have also made special provisions for the care of their tuberculosis patients.——The Woman's Antituberculosis League of Albany has planned for a "Button Day" on Labor Day, September 6.

Sanitary Conditions of Summer Resorts.—The sanitary inspection of summer resorts, which was first taken up by the State Department of Health in 1906, has been continued. In the Long Island district, five out of twenty-seven resorts were found to be in insanitary condition. At the reinspection last year, conditions had been corrected in two instances, and at the second inspection in June, 1909, the insanitary condition had been removed in one instance and partially removed in a second, while at the third, sanitary work was being carried on. In the Catskill resorts, nineteen out of sixty-four were found to be in insanitary condition, and at the 1908 reinspection, twelve were found to have corrected the nuisance, while at the reinspection in June, 1909, two of the remaining seven have made improvements, and the proprietors of the remaining five promised to make the desired changes in sanitary arrangements. In the Raquette River and Saranac and St. Regis watersheds, forty-two resorts were inspected, in twenty-four of which insanitary conditions were found to exist.

New York City

Inspectors Dropped.—Notices were sent August 20, to thirty-three medical inspectors who were appointed February 25, that their services would be dispensed with after August 25.

Personal.—Dr. Alpheus Freeman sailed for Europe August 28.——At the semi-milennial anniversary of the University of Leipzig, the degree of doctor of medicine was conferred on Prof. E. B. Wilson.——Dr. J. Richard Kevin, Brooklyn, has succeeded Major Henry L. Cochran as surgeon of the Twenty-third Infantry, N. G. N. Y.

Hospital Improvements.—Plans have been filed for a nine-story annex to the Babies' Hospital at Lexington avenue and Fifty-ninth street, which will cost $50,000.——Plans have also been filed for a new private laboratory for the professors of the College of Physicians and Surgeons of Columbia University to be built on the roof of a corridor connecting two wings of the college. This improvement will cost $3,000.

Epidemic of Paralysis.—In the Brownsville section of Brooklyn an epidemic of infantile paralysis has broken out which has afflicted more than 200 children between the ages of 1 and 5 years. Physicians and parents charge the Health Department with laxity as it is claimed that cases were reported two weeks ago and no measures were taken to investigate the nature and causes of the epidemic.

Academy News.—The Wesley M. Carpenter Lecture of the New York Academy of Medicine for 1909 will be delivered October 21, at 8:30 p. m., by Dr. Howard T. Ricketts, professor of pathology in the University of Chicago, on "Some Aspects of Rocky Mountain Spotted (Tick) Fever, as Shown by Recent Investigation." On November 18, the anniversary address will be delivered by Dr. Louis Livingston Seaman on "Personal Observations of the Sleeping Sickness in Central Africa."

Holmes Centenary.—The county medical society, on October 9, will hold a meeting commemorative of the eminence as a physician of Dr. Oliver Wendell Holmes. The meeting will be held at the New York Academy of Medicine, and addresses will be made by Dr. Maurice H. Richardson of Harvard Medical School on "Personal Reminiscences of Dr. Oliver Wendell Holmes," by Dr. Edward O. Otis, Boston, on "Dr. Holmes' Achievements as a Physician," and by Dr. William H. Thomson, New York City, on "The Many-Sided Holmes."

City Children and Tuberculosis.—An investigation made during the summer at the Sea Breeze Hospital, maintained by the Association for Improving the Condition of the Poor, indicates that from 25 to 30 per cent. of the small school children in the poorer tenement districts of the city are infected with tuberculosis. Up to the middle of August 728 children had been tested for tuberculosis at Sea Breeze, 381 boys and 347 girls. Of this number 205 and 281 respectively showed a positive reaction to the tuberculin test. The percentage of reaction among the girls was much higher than among the boys. The reaction in many instances may have meant only a tuberculous gland which would probably lead to nothing serious.

PENNSYLVANIA

Farmers and Tuberculosis.—At the farmers' meeting at Landenberg, August 27, 5,000 people were in attendance. The important phase of the gathering was the launching of the antituberculosis campaign for pure milk. The meeting was addressed by dairymen, physicians and educators from various parts of the country.

Fight on Witchcraft.—"Hex" and "Pow-Wow" physicians, who have had a strong hold on the superstitious portion of the population of Reading and surrounding country for many years, and who are said to be responsible for the deaths of six infants, are to be prevented from doing business by the health authorities. The coroner of Berks county is using every effort to bring the guilty persons to justice.

Personal.—Mr. Wallace Hatch, executive secretary of the Pennsylvania Society for the Prevention of Tuberculosis, has resigned.——Dr. William J. Davidson, physician at the plant of the Pressed Steel Car Company, McKee's Rocks, was wounded severely in the neck and arm during the riots, August 22.——Dr. John Hoskins, Chester, was thrown from his carriage, August 22, and seriously injured.——Dr. Albert Ellershaw, Bridgeport, has sailed for Europe.

Medical Missionary Society.—Application has been made for the incorporation of the Pennsylvania Medical Missionary Society with the objects of assisting students of evangelical faith, preparing for medical missionary work; of diffusing knowledge and arousing interest in medical missions; of obtaining contributions of money for their support; and of establishing and maintaining homes or residences for the use of missionaries and students preparing for missionary work.

Philadelphia

Personal.—Dr. Walter W. Roach has been appointed assistant medical inspector in the bureau of health, vice Dr. William Drayton, Jr., resigned.——Dr. John L. Borsch, Jr., has been decorated by the Italian government for professional services rendered the king of Italy.——Dr. Charles F. W. Plass has returned from Europe.——Dr. Mortimer Herzberg, assistant bacteriologist to the bureau of health, has resigned to accept the professorship of pathology and bacteriology in the University of South Dakota.——Dr. Charles S. Barnes has sailed for Europe.

Bags for Milk.—The director of health and charities, on August 20, began the distribution of bags, in which it is proposed milk dealers shall place the supply of bottled milk served to customers. The bags, besides protecting the food supply, have printed on them advice regarding pure milk, which is as follows:

> Buy milk from a RELIABLE DEALER, where you get it clean and fresh.
>
> Keep the milk ALWAYS on ice. Don't leave it standing for several hours on the doorstep.
>
> Keep bottles and every utensil coming in contact with milk ABSOLUTELY CLEAN.
>
> Feed at regular intervals. Keep baby clean. Bathe every day. Keep rooms clean.
>
> Keep child in shade and in open air as much as possible.
>
> If you obtain milk in bottle (the best way) allow it to stand on ice for a few hours before making the day's feeding. Shake the bottle before using. If obtained in can or pitcher, COVER it to prevent dirt from entering.
>
> If the milk mixture does not agree with the baby, try for one or two days, removing one-half the quantity of boiled water and in its place add the same quantity of BARLEY WATER (made by boiling one tablespoonful of pearl barley in one quart of water for one hour, and then straining).
>
> If the child vomits, has loose, green passages, or is otherwise sick, procure medical aid, without delay.
>
> At all ages between feeding give freely to the baby water previously boiled.
>
> Do not give any other liquids or any solid food, except on advice from a physician.
>
> For detailed information apply or write to the Bureau oof Health, Room 712, City Hall.

VIRGINIA

Typhoid Study.—The Virginia Department of Health has announced that Staunton will be the center of the new movement for the study of the typhoid fever situation in the valley. A traveling laboratory will be established in charge of Dr. A. P. Waddill, under the supervision of Assistant Health Commissioner A. W. Freeman and Dr. H. T. Marshall.

Personal.—Dr. John R. Bagby, health officer of Newport News, has resigned.——Dr. J. Frazer Jones, Richmond, was operated on for appendicitis, August 9.——Dr. W. L. Statewood has succeeded Dr. T. F. Jarrett, resigned, as assistant physician at the Central State Hospital, Petersburg. Dr. Thomas W. M. Long has been appointed second assistant physician, Dr. James C. Bardin, pathologist and bacteriologist, and Drs. Meade S. Brent, Northumberland county, and Robert A. Davis, Newport News, have been appointed additional assistants.——Dr. Lawrence T. Royster has been elected chairman of the school board of Norfolk.

GENERAL NEWS AND COMMENT

Obstetricians to Meet.—The annual meeting of the American Association of Obstetricians and Gynecologists will be held in the Hotel Anthony, Fort Wayne, Ind., September 21-23, under the presidency of Dr. William H. Humiston, Cleveland, Ohio.

Guarding Against Bubonic Plague.—To guard against the introduction of bubonic plague in United States ports, the Public Health and Marine-Hospital Service has directed its surgeons at leading shipping ports to enforce the rules safeguarding vessels bound for American ports against infection by rats. In eastern ports, vessels bound for America are not allowed to go alongside wharves, and are required to have rat guards on all lines before bills of health are furnished them.

Personal.—Surgeon Henry R. Carter, P. H. and M.-H. Service, director of hospitals of the Canal Zone, and family, sailed from Cristobal for New York, August 11. Dr. Carter has had more than five years' service in the isthmus and will not return at the expiration of his leave of absence.——P. A. Surgeon Donald H. Currie, P. H. and M.-H. Service, has gone to Bergen, Norway, as a delegate to the International Leprosy Congress.——Surgeon-General George H. Torney and Major Paul F. Straub, Medical Corps, U. S. Army, are representing the Army at the International Medical Congress, Budapest. During General Torney's absence, Col. Valery Havard will act as Surgeon-General.——Dr. Duke W. Goodman, U. S. P. H. and M.-H. Service, Fort Limon, is reported to be seriously ill with cerebral hemorrhage.

Army Instructs National Guard.—The Medical Corps of the Army has made experiments this summer in establishing camps of instruction for the medical department and hospital corps of the national guard of the various states. These three camps were established at Antietam, Md., Sparta, Wis., and the Presidio of San Francisco, under the charge of officers of high rank in the medical corps of the army, and were kept open for two periods of fourteen days each. The officers attending the camp were furnished pay, transportation, and subsistence, and the work undertaken included hospital corps drill, first-aid work, military hygiene, medical service in campaign, administration, and practical field work. Great interest was taken in the course of instruction by the students and it is to be hoped that the government will see fit to continue this excellent and valuable work.

Warning Concerning Alleged Agent.—The profession is warned against a man who pretends to represent the William Meyer Company, manufacturers of electrotherapeutic apparatus, Chicago, but who, the firm says, is swindling doctors by obtaining money without giving any return. The man is reported as a Swede or German-American, with a broken accent, about five feet, six inches tall, heavily built, clean shaven, with a very full face, a pasty white complexion, a rather protruding lower lip and dark moist hair; he is well dressed, has a suave manner, displays several valuable diamond rings and wears a large blue stone in his shirt front. He has given the name of Amos Cato, but he has given many other names. The William Meyer Company state that he does not represent them and that warrants are out for his arrest at Tacoma and Seattle. His method of swindling is to solicit orders and to obtain money as payment or partial payment for the goods, without making a return for the money.

PARIS LETTER

(From Our Regular Correspondent)

Paris, Aug. 19, 1909.

Reform in Pharmaceutical Studies

The superior council of public instruction has during its last session been considering the reform of the course of studies leading to the pharmacists' diploma. According to the new plan, which will go into force Nov. 1, 1910, the pharmaceutical course will last five years; one year of apprenticeship or *stage* in a laboratory (to be required without exception), and four years of academic work. The apprentice or *stagiaire* must be 16 years old and have graduated from the secondary schools. On completion of the *stage* the candidates will pass an examination; during the four academic years, candidates will take sixteen quarterly terms of school work and will pass six examinations.

The Selection of Physicians by Pauper Patients

The law of July 15, 1893, in regard to medical charity, permits each community to choose the method of dispensing this charity; thus there are two systems in use. In fifty-nine departments the pauper selects his own physician, while in others, especially in Paris and in the Department of the Seine, the administration selects a physician. In Paris these physicians, numbering 240, are chosen for three years by the prefect of the Seine and their appointments are renewed from one three-year term to another. They receive a salary in proportion to the number of paupers in the districts which they have to visit, without regard to the number of visits. This system is to-day in disfavor. The municipal council inclines toward permitting the patient to select his physician and the Chamber of Deputies is considering an amendment of the law to this effect. The law on industrial accidents recognizes the principle that to deny the patient the right to select his physician is to interfere with personal liberty, and various medical associations are demanding that the same liberty should be accorded to paupers as to the victims of industrial accidents. Under the new system physicians would be paid according to the legally established scale for industrial accidents, which is lower than the ordinary scale of fees, and it is said that the expenses would be no higher than under the present system.

A New University

As soon as it meets the Senate will consider a bill passed by the Chamber of Deputies to reorganize the Schools of Higher Education of Algiers into a university, and to change the School of the Practice of Medicine and Pharmacy of Algiers to a mixed college of medicine and pharmacy.

An Educational Campaign Against Quackery

A medical periodical, the *Médecin de campagne* has inaugurated a contest open to French-speaking physicians, the object being the composition of an antiquackery circular, intended for the public at large, to be written in a clear and striking style on the dangers of quackery, the methods and the sources of the fortunes of quacks, their exploitation of the credulous, and the difference between men of real scientific achievement and commercial promoters. Thousands of copies of this circular will be given out by the *Médecin de campagne* to medical societies and to physicians for circulation among their patients.

French Association of Urology

The thirteenth session of the French Association of Urology will be held Oct. 7-9, 1909, at Paris at the College of Medicine under the presidency of Professor Guyon. The subject for discussion is "Calculi of the Ureter;" the essayist is Dr. Jeanbrau, professor *agrégé* of the college of medicine of Montpellier.

The Tillaux Monument

The monument erected to the memory of Professor Tillaux will be dedicated Oct. 7, 1909, at the amphitheater of anatomy of the hospitals.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Aug. 11, 1909.

Personals

Death is claiming our distinguished gynecologists at a fearful rate. While Pfannenstiel and Runge have left us within the last few weeks, Prof. v. Rosthorn at Vienna has just succumbed to an apoplectic stroke while hunting. [A notice of this death appeared in The Journal, August 21, page 647.] The deceased was closely related to us in Germany, as he was for some years director of the gynecologic clinic of Heidelberg. From thence he was called two years ago to Vienna.

The filling of the position of director of the medical clinic at Greifswald has taken a singular course. In a quite unusual way Professor Stern, at Breslau, who received a call last April (after repeated refusal of other professors), has twice accepted and again declined the position. I am unaware of the reasons for this conduct. The first assistant of Professor Kraus has now been appointed in his place, and it is to be hoped that the Greifswald clinic has at last a director.

The director of the medical policlinic in Strassburg, Professor Kohts, has resigned his position, and the assistant of Professor Müller in Munich, Dr. E. Meyer, has been appointed chief of the policlinic. A rearrangement of the university faculty has also occurred at Freiburg. In place of Professor de la Camp, who, as I reported sometime ago, is the successor of Bäumler as director of the medical clinic, Privatdocent Dr. Morawitz of Heidelberg has been appointed. In addition, a new extraordinary professorship for children's diseases has been established, and Professor Salge of Göttingen, a pupil of Heubner, has been selected for the chair.

Duke Karl Theodor of Bavaria, the well-known ophthalmologist, celebrated his seventieth birthday, August 9. This princely colleague is the author of a number of very creditable scientific articles in the field of ophthalmology. For many years he has had an extensive practice, and his skill, particularly in cataract operations, is celebrated. However, as he treats the patients gratis he infringes considerably on the practice of the neighboring ophthalmologists, and these have often complained regarding this matter. Nevertheless, the duke enjoys a remarkable degree of respect among physicians in Bavaria with regard to professional relations since, so far as consistent with his position, he has supported the efforts of physicians for the improvement of their economic condition and social standing. Munich and the well-known health resort, Tegernsee, where the duke resides most of the time, have given him the freedom of the city on the occasion of his birthday.

The Campaign Against Quackery

The medical profession in western Bavaria, the Rheinpfalz, have adopted a new method of combating the patronage of quacks by the public; they have passed a resolution to refuse medical aid to such families as first call in a physician in case of injury and then, with reckless disregard of the same, allow quacks to assume the after-treatment. A single visit in case of necessity is to be excepted. It can not be denied that such a resolution will restrain many from carelessly exchanging the physician for a quack, but this measure will secure as little real success as others, and, moreover, may be the occasion of hardships to many.

Spread of Typhoid

This year as usual a relatively larger number of typhoid cases occurred in the German empire in the months of July and August. To what this explosive increase of typhoid morbidity at this time of the year is to be referred has not been surely determined. It is partly due to the greater movement of the population which takes vacation journeys in these months, and partly to the harvest work which is distributed over large areas of land. In almost all these cases the occurrence of the typhoid epidemic is due to water infection. Such has been shown to be the cause of a marked epidemic which prevailed in Altwasser, a large village of upper Silesia, which is inhabited chiefly by miners and factory workers. In this relatively small district in the course of a few weeks 622 cases of typhoid occurred, fortunately with the light mortality of 32 (5.1 per cent.). Moreover, the military maneuvers which take place in these months give occasion for the origin and increase of typhoid. Thus in Hanover 21 cases of typhoid fever were found in one army corps, and those attacked had taken part in an exercise of the ambulance corps, during which the infection must have occurred, according to the investigations made. In this epidemic there were no deaths. The mortality of typhoid is less than formerly. Great stress is laid on rendering typhoid bacillus carriers harmless, as their importance for the spread of typhoid is becoming more and more recognized. The government of Saxony published an edict in June according to which district physicians must direct their attention to individuals who permanently excrete typhoid bacilli, report them to the authorities and inform the persons concerned regarding the danger for their environment which they constitute. Bacillus carriers who deal with food supplies must abandon such an occupation.

The Isolation of Advanced Consumptives

While extensive provision is made for consumptives in the initial stages the care of those in advanced stages leaves much to be desired. They are not received into the sanatoria, as a cure is out of the question, and the funds must not be sacrificed for useless therapeutic efforts. On the other hand, it is generally recognized that there is a constant danger of the spread of tuberculosis especially by these patients. B. Fränkel, and especially Robert Koch, have for many years emphasized the fact that the important factor in fighting tuberculosis consists less in curing consumptives than in the making incurable consumptives harmless. All measures which have been used heretofore to secure the isolation of such patients have had little success. The construction of special invalid homes or separate departments for such patients in the hospitals with rest-rooms and gardens has been tried. But such institutions have naturally the character of houses to die in, and are therefore feared and avoided by the patients. For this reason the isolation of these patients in institutions in which both curable and incurable patients may find a place in separate departments is favored. Moreover, the attempt to place consumptives in small cottage homes in the neighborhood of their previous home must be regarded as hitherto a failure. The number who can be isolated in this way is relatively so small that it has no influence on the suppression of tuberculosis. Under the circumstances it is necessary at present to leave these patients in their homes and to secure their isolation as far as possible by means of instructions and nursing. An improvement could be secured if the introduction of compulsory notification of tuberculosis should provide a legal ground for the removal of patients from their homes and their isolation in hospitals. To be sure, the prospects for such a measure, which is already in existence in other countries, is very small in consideration of the present composition of our legislative bodies.

Division of the Ministry of Education

A reorganization of the Prussian ministry of education (*Kultusministerium*), the necessity for which I have formerly noted, will, as I can authoritatively state, be accomplished in a short time. The department, which consists of three divisions, will give up the medical bureau, which will be attached to the department of the interior, so that the *Kultusministerium* will hereafter include only matters of education and the affairs of the church. Whether this transfer of medical affairs to the department of the interior will be of advantage for the public health and for physicians I very much doubt. On the whole, the business will be conducted in the same way as heretofore. A positive advance can be secured only by another organization, that is to say, by the unification of all sanitary matters which are now distributed through a series of departments (thus, railroad hygiene is cared for by the department of railroads, hygiene of trades and buildings by the department of public works), and by granting a greater independence to the medical division. The establishment of a special medical department would be of the greatest importance, but there is no prospect of carrying out such a project, aside from other difficulties, in consequence of the present unsatisfactory financial condition of Prussia in spite of the financial reform.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug. 15, 1909.

Death of Eminent Viennese Professors

Within a short time, two gynecologists of our university senate died unexpectedly, and their loss is deeply felt by the profession. The younger, and the better known of the two, Prof. Alfons von Rosthorn, was only 52 years old. He was in his younger days assistant to Breisky and Chrobak, both well-known obstetric and gynecologic surgeons, whose professorship in the Vienna Allgemeines Krankenhaus meant an epoch of brilliant scientific achievements. Rosthorn soon was offered a professorship in Graz, later on in Heidelberg, and when two years ago Chrobak retired from his post in Vienna, the brilliancy of Rosthorn's researches and his fame as a surgeon prompted the Vienna medical faculty to elect him as Chrobak's successor. Under his supervision, in cooperation with Schauta, the new clinics were finished and many valuable suggestions were offered by the newly appointed professor. When in 1908 he finally took over the charge of the new clinic, he laid special stress on the teaching of the students, imbuing them with the motto: "Primum non nocere." He soon drew many students to his lectures, for he had the gift of filling their minds with the enthusiasm of the investigator. The short space of time in which he had the opportunity to make himself prominent in Vienna only showed how much we have lost by his death. Rosthorn's chief attention was directed to the diseases of the adnexa of the female genitourinary system, and his main merit during his short activity here lay in the fact that he insisted on a prolonged term of service for each student as an interne at the hospital. The other man whose death came as a shock to his numerous friends and pupils was G. C. Lott, professor of obstetrics and gynecology, and director of the gynecologic department of the Poliklinik. Lott was a conservative but energetic surgeon, whose anatomic researches form the foundation on which the teaching of the pathology of the lower uterine segment is based. He reached the age of 66 years.

Pellagra in Austria: New Report

Since 1905 the action of the government in suppressing pellagra has been going on and including all affected areas. Altogether a population of 2,250,000 has been investigated with the result that about 78,163 persons (3 per cent.) were found to be suffering from one form or another of the disease. Certain districts were more affected than others, and as a rule, the poorer classes succumbed more easily than those who could procure the food regarded as necessary. The measures of the government have been of a prophylactic nature. Apart from instituting bakeries with an ample supply of good flour, where the people could obtain good bread at a minimum price, salt and quinin were distributed freely, it having been observed that the exhibition of these substances had a marked effect on the course of the disease. The action of the government (described in THE JOURNAL, Aug. 1, 1908, li, 420) has since last year cost about $45,000, and the benefit derived by it has prompted several corporations in the affected eastern provinces of the empire to assist the board of health in its efforts by generous gifts. Thus the funds at disposal will enable the extension of the action to all afflicted districts. Out of the cases treated within the last two years, there were recurrences in 126.

Regulations Concerning General Anesthesia

Some regrettable accidents, among them a death from the effects of narcosis before operation, have prompted the government to revise the regulations dealing with general anesthesia for hospitals. The following points have been especially worked out: In a hospital anesthesia must not be produced except by a special anesthetist. In no case may a surgeon anesthetize and operate at the same time, except in an emergency, when necessary to save life. If in a hospital a nurse or student is entrusted with the administration of the narcotic substance, such individual must be controlled and assisted by a qualified surgeon. The surgeon should select the kind of narcosis as well as satisfy himself of the purity of the chemicals used, as the entire responsibility rests with him. Whenever possible, the open method should be preferred, and the A. C. E. mixture is recommended, unless pure ether is required. Special stress is laid on the necessity of examination for the presence of the much-feared "status lymphaticus." Every month reports of the number of anesthesias, the duration and the result, along with the kind and quantities of narcotic substance used, have to be sent to the board of health. Needless to say, in each case of fatal narcosis a very strict postmortem examination has to be made to find out the reason for the death.

Correspondence

The Turner Memorial Fund

To the Editor:—The late Dr. J. Edward Turner, the founder and projector of the first inebriate asylum in the world, built at Binghamton, N. Y., died in indigent circumstances and was buried at Wilton, Conn. No stone or monument marks his burial-place.

Dr. Turner was the first man to point out the practical possibilities from the medical study and treatment of inebriates in an institution, and to indicate that the great alcoholic problem must be solved by a scientific study of the inebriate and the nature and influence of alcohol. His views were severely ridiculed; and he was persecuted as a crank, but this only increased his ardor, energy and self-sacrifice. He was a century ahead of his day and generation, and his writings and books indicate a knowledge of the subject which even now is just beginning to dawn on the minds of the most advanced students.

Now that the alcoholic problem is coming into prominence, and is so intimately associated with the great hygienic problems of the day, it should be the privilege as well as the duty of American physicians to recognize Dr. Turner's marvelous work and studies in some manner.

A committee (of which I am chairman) has been appointed by the Society for the Study of Alcohol and Other Narcotics to solicit subscriptions for the purpose of erecting over Dr. Turner's grave a monument costing about $600 or $700. Dr. L. D. Mason, 171 Joralemon street, Brooklyn, the treasurer of the Turner Memorial Fund, will receive and acknowledge contributions of any amount for this purpose. Subscribers to the fund will receive a copy of Dr. Turner's "History of the First Inebriate Asylum in the World," a volume of 500 pages, published a short time before his death, and containing an account of the struggles and beginnings of the first institution at Binghamton. It is proposed to hold, when the contributions are sufficient, a formal dedicatory service at Wilton, Conn., at which addresses will be delivered in memory of Dr. Turner and his work.

Correspondence is solicited either with Dr. Mason or with the undersigned. T. D. CROTHERS, M.D., Hartford, Conn.

The Pneumococcus-Carrier a Possible Danger

To the Editor:—"An Epidemic of Empyema," reported in THE JOURNAL, Aug. 14, 1909, p. 529, leads me to ask if one case developed in advance of the others, and if the author, or some other person had, within a few hours following a visit to the home of the first pneumonia patient, come in contact with the persons who afterward developed pleuritis?

It is interesting to know how extremely susceptible some persons are to pulmonary infection, especially the old and the young and those having a tendency to such troubles.

I conducted a series of experiments on the possibility of the conveyance of infection in the laboratory of the late Professor Miller of Berlin in which the saliva of a visiting physician was found to contain the elements of the diseases of the various cases, seen by him, more than an hour after leaving them. Among these were pneumonia cases. I found that after the mouth and nares were sterilized the saliva would not produce pneumonia, septicemia, etc., as it did before sterilization.

I am inclined to believe that pneumonia as well as measles, scarlet fever, diphtheria, etc., might be carried from house to house, causing epidemics, unless the physician and visitors are sterilized after leaving the sick chamber.

It seems to me that this is a subject worthy of consideration by the U. S. Public Health and Marine-Hospital Service.

G. LENOX CURTIS, New York.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POISONING FROM MRS. POTTER'S WALNUT JUICE HAIR STAIN

To the Editor:—In THE JOURNAL of August 14, I noticed a report of a dermatitis following the use of Mrs. Potter's Walnut Juice Hair Stain. I wish to report another due to the same preparation.

History.—On July 6, 1909, I was called in to see a middle-aged woman who, for a week, had had a dermatitis of scalp, back of neck and ears, shoulders and scapular region. She complained of intense itching and soreness.

Examination.—The skin over the scalp, back of neck and ears and shoulders was very red and swollen; scattered here and there were papules, vesicles, pustules and scabs. The scalp especially was very pustular. Itching and pain were severe especially in scalp. The patient said the eruption had broken out immediately following a second application of Mrs. Potter's Walnut Juice Hair Stain, first application having been just two days preceding second application.

Treatment.—I advised washing the hair and scalp with green soap and water daily and using a soothing antiseptic ointment. The dermatitis cleared up in four days.

WILLIAM W. WOOD, M.D., Jamestown, N. D.

To the Editor:—My excuse for reporting the following case of dermatitis venenata caused by the use of Mrs. Potter's Walnut Juice Hair Stain is based on two grounds: Marked edema and induration of tissues involved and the intractable course of the disease.

., a woman aged 59, called me May 20, 1909,
uption on head and neck of several days'
hair dye was at once surmised owing to the
color of the hair with gray roots under-
limited having used Mrs. Potter's Walnut
vo occasions, two days apart, the eruption
ours after the last application.

Examination.—The face and neck were covered with a papular eruption, the inflamed borders of which had coalesced presenting a uniform deep, dusky red color extending from the hair line to the clavicles. The lower eyelids were very edematous and the left ear was indurated and swollen to twice the normal size. The right ear was of a dusky red color, but without papules or swelling. Heart and kidneys were apparently normal, temperature and pulse remaining normal throughout the course of the disease.

Treatment.—The itching and burning were relieved for a short time only by cooling lotions, the prescriptions having to be changed at frequent intervals, to give continuous relief. The usual antipruritic ointment gave no relief at all, the patient declaring that "salves" made the itching worse. While the symptoms were reasonably relieved by treatment, the dermatitis with the edema of eyes and thickening of ear persisted for six weeks. In the third week a scattered papular eruption appeared on the chest and shoulders. In this location the itching was not so intense. At the end of six weeks the eruption had faded and the edema had almost disappeared. the sensation of burning remaining—without itching—for some time after the skin had cleared up.

E. A. HANNUM, M.D., Cleveland, O.

To the Editor:—I have just seen a patient poisoned as described by Dr. Schalek (THE JOURNAL, Feb. 13, 1909) by the Potter hair dye. This woman had used several other so-called walnut juice stains, but was not poisoned until she applied the Potter product.

EDWARD NORTON EWEN, M.D., Oakland, Cal.

COMMENT.—Other cases of poisoning due to this preparation have been reported in THE JOURNAL as follows: One case Feb. 13, 1909; one case March 6, 1909; two cases April 3, 1909, and one case Aug. 14, 1909. The subject is referred to editorially in this issue.

PROPOSED SECTION ON PSYCHIC FORCES

To the Editor:—The suggestion by Gustavus Werber in THE JOURNAL, August 28, p. 731, to establish a section on psychic forces in the American Medical Association merits the encouragement of the members of the profession.

Around the accredited and orderly facts of our science of medicine there floats a sort of dust cloud of exceptional phenomena at times and places that can not readily be ignored but which always is more easy to ridicule than to explain. No part of this mystical phenomena has been treated with a more contemptuous scientific disregard than the mass of phenomena generally termed psychic. Lord Kelvin, then Sir William Thomson, in the president's address of the British Association for the advancement of science in 1871, laid down a dictum that should be the motto for all true scientists the world over. He then said: "Science is under bonds, by the eternal principles of honor, to look fearlessly in the face of every problem that is presented to her." The physician is now interested in psychotherapeutics and this subject no doubt can not gain much progress until a lot of other phenomena along that line shall also receive the attention that they rightly merit.

In Europe many of the leading scientists and physicians are interested in these phenomena. I heartily agree that we in America can not afford to lag behind in this movement and believe that the medical man is the right man to study it, for he of all others is best prepared and has the best opportunity.

DANIEL S. HAGER, M.D., Chicago.

The Public Service

Medical Department of the Army

Changes for the week ended Aug. 28, 1909:

Rhoads, Thomas L., major, August 20, left Walter Reed Army General Hospital on 10 days' leave.

Hughes, Leonard S., 1st lieut., M. R. C., August 15, left Department Rifle Range, Cal., en route to Fort Lawton, Washington, for duty.

Wells, F. M., 1st lieut., M. R. C., August 18, left Fort Robinson, Nebr., en route to Fort Leavenworth, Kan., for duty with troops to Des Moines, Iowa.

Tukey, Willim H., 1st lieut., M. R. C., granted 21 days' leave of absence about Aug. 20, 1909.

Harris, Jesse R., capt., ordered to proceed from Fort George Wright, Wash., to Boise Barracks, Idaho, for temporary duty.

Baily, Howard H., capt., granted 15 days' leave of absence when his services can be spared.

McLellan, George H., 1st lieut., M. R. C., ordered to proceed from Fort Crook, Nebr., to Fort Des Moines, Iowa, for duty with troops of the 2d Cavalry to Des Moines Iowa.

Brown, O. G., capt., ordered to proceed from Fort Robinson,
Nebr., to mil at Des Moines, Iowa, for duty
with Second from Fort Leavenworth, Kan.
Allen, John ve of absence for two months.
Snyder, He on expiration of present leave
of absence to proceed to New York City on business connected with the Medical Supply Depot, and on completion of same to proceed to St. Louis, and assume charge of the Medical Supply Depot in that city, relieving 1st lieut. Ferdinand Schmitter, M. C., who will return to Jefferson Barracks, Mo.

Barney, Fred M., 1st lieut., M. R. C., granted 15 days' leave of absence about Sept. 10, 1909.

Clark, Joseph T., major, Brown, Orville G., capt., Van Dusen, James W., capt., McLellan, George H., Bastion, Joseph E., Miller, Albert L., Wells, Francis M., Burket, John A., 1st lieuts., M. R. C., ordered to proceed to Des Moines, Iowa, to arrive not later than September 17, to participate in a military tournament at that city, September 20 to 25, and on termination thereof, to return to their proper stations.

Sweazey, Verge E., capt., granted two months' leave of absence on surgeon's certificate of disability.

Cutliffe, Wm. O., 1st lieut., M. R. C., granted leave of absence for one month on surgeon's certificate of disability.

Craig, Emmett J., dental surgeon, granted leave of absence for two months.

Mills, Robert H., dental surgeon, ordered to Fort Riley, Kan., for temporary duty.

Sanford, Joseph L., 1st lieut., M. R. C., granted 30 days' leave of absence to take effect on or about Sept. 2, 1909.

Jackson, Thomas W., 1st lieut., M. R. C., on being relieved from temporary duty at Washington Barracks, D. C., by Major C. R. Reynolds, will proceed to Fort Washington, Md., for temporary duty, and on return of Captain Samuel J. Morris, will proceed to Fort Hunt, Va., for duty.

Hart, James W., 1st lieut., M. R. C., relieved from additional duty at Fort Washington, Md., and duty at Fort Hunt, Va., and ordered to proceed to Cayay, P. R., for duty.

Hutton, Paul C., capt., granted leave of absence for one month.

Davidson, Wilson T., capt., relieved from duty in the Philippine Islands, and assigned to duty as surgeon of the transport *Buford,* on the voyage commencing Sept. 16, 1909, and on arrival at San Francisco will report to The Adjutant General of the Army for further orders.

Fox, James S., 1st lieut., M. R. C., ordered to Fort Andrews, Mass., for temporary duty, and on its completion, to return to his proper station.

Stallman, George P., 1st lieut., M. R. C., granted leave of absence for one month, with permission to apply for 15 days extension.

Medical Corps of the Navy

Changes for the week ended Aug. 28, 1909:

Peck, A. E., surgeon, detached from the Marine Recruiting Station, New York, and ordered to the Marine Recruiting Station, San Francisco.

Murphy, J. A., surgeon, detached from the *Olympia*, August 27, and ordered to the Marine Recruiting Station, New York.

Rennie, W. H., P. A. surgeon, detached from the *Rhode Island*, and ordered to the Marine Recruiting Station, New York.

Grieve, C. C., P. A. surgeon, detached from duty at the Naval Hospital, Sitka, Alaska, and ordered to the *Independence*.

Brister, J. M., P. A. surgeon, detached from the *Independence* and ordered home to wait orders.

Sinclair, J. A. B., asst.-surgeon, ordered to command the Naval Hospital, Sitka, Alaska.

Brooks, F. H., asst.-surgeon, ordered to the Naval Recruiting Station, Omaha.

Sterne, C. F., asst.-surgeon, detached from the Naval Recruiting Station, St. Louis, and ordered to duty at the Naval Hospital, Puget Sound, Wash.

Thomas, G. C., asst surgeon, detached from the Naval Recruiting Station, Omaha, and ordered to the *Rhode Island*.

Steadman, W. G., asst.-surgeon, discharged from treatment from the Naval Hospital, Norfolk, Va., and granted sick leave for six weeks.

Reed, T. W., asst.-surgeon, detached from the Marine Recruiting Station, San Francisco, and ordered to examination for promotion and then to wait orders.

Bloedom, W. A., acting asst.-surgeon, ordered to duty at the Naval Medical School Hospital, Washington, D. C.

Fauntleroy, A. M., P. A. surgeon, detached from the *Hartford*, August 29, and granted leave for one month.

Johnson, J. T., acting asst.-surgeon, ordered to duty at the Naval Hospital, Naval Hom

Reeves, I. S. K., P. from treatment at the Naval Medical School D. C., and granted sick leave for one month.

Reeves, I. S. K., P. A. surgeon, unexpired sick leave revoked, ordered to the Navy Yard, Philadelphia, September 3.

Kuder, W. S., asst.-surgeon, detached from the Navy Yard, Philadelphia, September 3, and ordered to Washington, D. C., for examination for promotion and then to wait orders.

Sutton, D. G., asst.-surgeon, detached from the Naval Academy and from the *Tonopah* and ordered to duty in connection with the *Vestal* and to duty on board that vessel when commissioned.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Aug. 25, 1909:

Kalloch, P. C., surgeon, granted 7 days' leave of absence en route to station.

Wasdin, Eugene, surgeon, granted 1 month's leave of absence from Aug. 22, 1909, on account of sickness.

Geddins, H. D., surgeon, detailed to represent the Service at the 6th International Medical Congress to be held at Budapest, Hungary, Aug. 29-Sept. 4, 1909.

Rosenau, M. J., surgeon, directed to proceed to Philadelphia, on special temporary duty.

Corput, G. M., P. A. surgeon, granted 10 days' leave of absence from Aug. 13, 1909, on account of sickness.

Vogel, C. W., P. A. surgeon, granted 3 days' leave of absence from Aug. 23, 1909, under paragraph 189, Service Regulations.

Gwyn, M. K., P. A. surgeon, granted 7 days' leave of absence from Aug. 17, 1909, under paragraph 191, Service Regulations.

Stimson, A. M., P. A. surgeon, granted 7 days' leave of absence from Aug. 16, 1909, under paragraph 191, Service Regulations.

Ebersole, R. E., P. A. surgeon, on expiration of present leave of absence, relieved from duty at Manila, P. I., and directed to proceed to San Francisco.

Wollenberg, R. A. C., asst.-surgeon, granted 2 months' leave of absence from Sept. 10, 1909.

Altree, G. H., acting asst.-surgeon, granted 30 days, leave of absence from Sept. 2, 1909.

Boyd, Frank, acting asst.-surgeon, granted 22 days' leave of absence from Aug. 20, 1909.

Fogarty, J. N., acting asst.-surgeon, granted 18 days' leave of absence from Sept. 4, 1909, with pay, and 12 days' leave of absence from Sept. 22, 1909, without pay.

Frissell, C. M., acting asst.-surgeon, granted 20 days' leave of absence from Aug. 13, 1909; 9 days with pay and 11 days without pay.

MacCaffry, Ward B., acting asst.-surgeon, transferred from Reedy Island Quarantine Station to Cape Charles Quarantine Station, effective Sept. 1, 1909.

O'Rielly, W. J., acting asst.-surgeon, granted 2 days' leave of absence from Aug. 31, 1909.

Thornton, M. J., acting asst.-surgeon, granted 1 day's leave, Aug. 15, 1909, on account of sickness.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service during the week ended Aug. 27, 1909:

SMALLPOX—UNITED STATES

California: Berkeley, July 24-31, 1 case; San Francisco, July 26-July 3, 1 case.
District of Columbia: Washington, Aug. 7-14, 1 case, 1 death.
Indiana: Fort Wayne, Aug. 7-14, 13 cases; South Bend, 1 case.
Iowa: Cedar Rapids, July 1-31, 1 case.
Kansas: Wichita, July 31-Aug. 7, 2 cases.
Missouri: St. Louis, Aug. 7-14, 2 cases.
Montana: Butte, Aug. 5-12, 7 cases.

SMALLPOX—FOREIGN

Belgium: Antwerp, July 17-24, 4 cases.
Canada: Halifax, July 31-Aug. 7, 1 case.
China: Amoy, June 26-July 3, 8 deaths; Kang Thau, June 1-30, 1 case, April 1-June 30, 7 cases, 1 death; Shanghai, July 3-10, 1 death, among natives.
Egypt: Cairo, July 1-8, 1 case, 1 death.
France: Paris, July 24-31, 1 case.
Italy: General, July 25-Aug. 1, 14 cases; Naples, 22 cases, 2 deaths.
India: Bombay, July 6-13, 7 deaths; Calcutta, June 26-July 3, 5 deaths; Madras, July 3-9, 1 case, 1 death; Rangoon, June 26-July 3, 3 deaths.
Mexico: Guadalajara, July 22-29, 1 death; Monterey, Aug. 1-8, 1 death; Veracruz, vicinity, Aug. 12, 6 cases.
Peru: Lima, July 17-24, 1 case.
Russia: Moscow, July 10-24, 71 cases, 9 deaths; Odessa, July 17-24, 4 cases; St. Petersburg, July 10-17, 18 cases, 3 deaths.
Spain: Barcelona, July 19-Aug. 2, 4 deaths; Tarragona, July 19-26, 1 death; Valencia, July 10-17, 6 cases; Vigo, July 24-31, 1 death.
Tripoli: Tripoli, July 10-24, 17 cases, 6 deaths.
Turkey: Constantinople, July 25-Aug. 1, 1 death.

YELLOW FEVER

Brazil: Para, July 10-31, 8 cases, 8 deaths.
Ecuador: Guayaquil, July 10-24, 6 deaths.
Mexico: Colima, Aug. 19, present; Medida, Aug. 6-13, 1 case.

CHOLERA—INSULAR

Philippine Islands: Provinces, June 26-July 3, 110 cases, 92 deaths.

CHOLERA—FOREIGN

China: Amoy, June 26-July 3, 11 deaths; Hankau, July 10-17, 1 case, 1 death; Kang Thau, June 1-30, 2 cases, 1 death, April 1-June 30, 4 cases, 2 deaths.
India: Bombay, July 6-13, 17 deaths; Calcutta, June 26-July 3, 56 deaths; Madras, July 3-9, 1 death; Rangoon, June 26-July 3, 2 deaths.

PLAGUE—INSULAR

Hawaii, Hilo, vicinity, Aug. 19-20, 1 cases, 1 death; Olas, Aug. 20-22, 2 cases, 2 deaths.

PLAGUE

Azores: Terceira, June 16, 3 cases.
Chile: Antofagasta, July 10, in Lazaretto; Iquique, July 11, 7 cases, July 16, 7 cases.
China: Amoy, June 26-July 3, 95 deaths, July 10-17, 73 deaths; Kang Thau, June 1-30, 37 cases, 19 deaths, April 1-June 30, 117 cases, 59 deaths; Hongkong, July 3-10, 4 cases, 2 deaths.
Ecuador: Guayaquil, July 10-24, 4 deaths.
India: General, July 3-10, 558 cases, 462 deaths; Bombay, July 6-13, 21 deaths; Calcutta, June 26-July 3, 41 deaths; Rangoon, 22 deaths.
Japan: Shikoku, July 28, 5 cases, 1 death.
Peru: General, July 3-10, 10 cases, 8 deaths.
Venezuela: Garacas, Aug. 6, 1 case.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phœnix, October 4-5. Sec., Dr. Ancil Martin.
Colorado: Capitol, Denver, October 5. Sec., Dr. S. D. VanMeter, 1723 Tremont St.
Georgia: Regular, Capitol Bldg., Atlanta, October 12. Sec., Dr. E. R. Anthony, Griffin. Homeopathic: Atlanta, October 4. Sec., Dr. R. E. Hinman, 153 Whitehall St.
Idaho: Boise, October 5-6. Sec., Dr. W. F. Howard, Pocatello.
Illinois: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.
Kansas: Topeka, October 12. Sec., Dr. F. P. Hatfield, Olathe.
Louisiana: New Orleans, October 1-2. Sec., Dr. Felix A. Larue, 211 Camp St.
Michigan: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
Minnesota: State University, October 5. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.
Mississippi: Jackson, October 12. Sec., Dr. S. H. McLean.
Montana: Capitol, Helena, October 5. Sec., Dr. W. C. Riddell.
New Jersey: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.
North Dakota: Grand Forks, Oct. 5-7. Sec., Dr. H. M. Wheeler.
Oklahoma: Ione Hotel, Guthrie, October 13. Sec., Dr. Frank P. Davis, Enid.
Rhode Island: Room 313, State House, Providence, October 7-8. Sec., Dr. Gardner T. Swarts.
Utah: Room 207, City and County Bldg., Salt Lake City, October 4-5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
Wyoming: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Additional Data for the Educational Number

In the list of medical colleges given on page 555 of The Journal, Aug. 14, 1909, the Educational Number, the University Medical College of Kansas City should have been included. That college has adopted the requirement of one year of collegiate work for admission in addition to a four-year high school education, the requirement to go into effect with the session of 1910-11.

Dr. Seneca Egbert, dean of the Medico-Chirurgical College of Philadelphia, writes that instead of 56 graduates, as published on pages 538 and 548 of the Educational Number, that college had 78 graduates.

At a meeting of the faculty of the Starling-Ohio Medical College of Columbus, held since the reports were sent to us, Dr. W. J. Means was elected dean, vice, Dr. George M. Waters.

A new medical building which will be completed about January 1, 1910, is now being erected by the Eclectic Medical Institute at Cincinnati. It will be a six-story structure, will cost about $50,000, and will be connected by covered bridge with the Seton Hospital. Special provision is made for laboratories, lecture rooms, offices and a library.

Medical Economics

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
BOWLING GREEN, KENTUCKY

The outline for the first weekly meeting of the postgraduate course for the third year is given herewith. Owing to unavoidable delay in preparation of the copy, the pamphlets containing the outline for the third year have not been printed, but are in course of preparation and will be ready for distribution by the middle of the month. County secretaries and others desiring copies of the third year course are requested to write Dr. Blackburn, stating the number of copies desired, etc., as the entire edition will be sent to Dr. Blackburn for distribution.

Third Year—First Month, First Weekly Meeting

SURGICAL DISEASES OF THE THORAX

ANATOMY OF THORACIC WALL AND DIAPHRAGM

THORAX: Shape, size, diameters, variations in sexes; osseous boundaries, sternum, ribs, vertebrae. Sternum, shape, location, costal and muscular attachments. Ribs, number, general characteristics and peculiarities. Dorsal vertebræ, characteristics and peculiarities. Costo-sternal and costo-spinal articulations. Muscles, vessels, nerves.

STERNAL REGION: Pectorals, triangularis sterni; internal mammary and branches, veins and lymphatics; nerves.

COSTAL REGION: Pectorals, serratus magnus, external and internal intercostals, number, attachments, functions; intercostal arteries, origin, relations, axillary branches; veins; lymphatics; nerves.

DIAPHRAGM: Position, shape, attachments, portions, openings.

ANATOMY OF LUNGS AND PLEURA

PLEURA: Parietal layer consisting of costal, mediastinal and phrenic portions, important relations of each; visceral layer, reflections, relations; pleural sinus. Mediastinum, portions, important contents of each, lymphatic glands.

LUNGS: Shape, size, costal and mediastinal surfaces, apex, base, borders, relations of structures forming root of lung, bronchial and pulmonary arteries, nerve supply, lymphatics.

ANATOMY OF VASCULAR SYSTEM

PERICARDIUM: Shape, size, layers, relation to chest wall, to surrounding structures, superficial cardiac triangle.

HEART: Size, shape, position, relation to chest wall, to lungs and pleura, muscular structure, situation of valves.

AORTA: Three portions, boundaries and relations of each.

SURFACE ANATOMY

REGIONS OF CHEST: Anterior, posterior, lateral. Outline of heart; apex beat; valves. Outline of lungs; of pleura.

Marriages

H. BROOKER MILLS, M.D., to Miss Caroline Wagner, both of Philadelphia, June 18.

WILLIAM E. PETERS, M.D., Carlisle, Pa., to Miss Mary L. Cain, of Philadelphia, August 20.

RALPH H. AUGUR, M.D., Washington, D. C., to Mrs. Stella H. Townsend, at Washington, August 16.

J. CLINTON MOBLEY, M.D., to Mrs. Julia Catherine Hanson, both of Memphis, Tenn., at Marion, Ark., August 8.

RALPH C. TILLEY, M.D., Lawrenceburg, Ind., to Mrs. Mattie C. Bell Chance Calvert Harris, of Chesterville, Ind., recently.

Deaths

Hiram Landis Getz., M.D. Jefferson Medical College, Philadelphia, 1874; for many years a member of the American Medical Association; first vice-president of the Iowa State Medical Society in 1897; president of the International Association of Railway Surgeons in 1901; president of the Iowa State Railway Surgeons Association in 1899; and first vice-president of the Tri-State Medical Society in 1900; formerly professor of obstetrics and diseases of women and children in the Iowa College of Physicians and Surgeons, Des Moines; for several years city physician of Marshalltown, Iowa, and first physician of Marshall county; chief surgeon of the Iowa Central Railway; district surgeon of the Chicago and Northwestern Railway and local surgeon of the Chicago Great Western Railway; formerly captain and assistant surgeon in the Iowa National Guard and later lieutenant colonel and a member of the governor's staff; president of the local board of U. S. pension examining surgeons; president of the board of education of Marshalltown, and postmaster of that city in 1894; was found unconscious in his room in Jacksonville, Fla., from the effects of morphin and died in St. Luke's Hospital, August 19, aged 57.

Lewis Balch, M.D. College of Physicians and Surgeons, New York City, 1870; formerly professor of anatomy and medical jurisprudence in Albany Medical College; consulting surgeon to St. Peter's Hospital, and attending surgeon to the Child's Hospital; health officer of Albany, and secretary to the State Board of Health; a member of the American Public Health Association; formerly surgeon of the 37th, 71st and 10th regiments, National Guard, State of New York; surgeon of the Second New York Infantry, U. S. V., during the Spanish-American war, and afterward a surgeon of volunteers in the Philippine Islands; in 1900 superintendent of sanitary improvements at Colon, Panama; died in his rooms at the Army and Navy Club, New York City, August 9, aged 62.

Edwin Lesley Marechal, M.D. University of Alabama, Mobile, 1870; a member and president of the Medical Association of the State of Alabama; formerly lecturer on hygiene and medical jurisprudence in his alma mater; one of the organizers of the Baldwin County Medical Association, and county health officer for several years; in 1890 organizer and president of the Alumni Association of the University of Alabama, Medical Department; health officer of Mobile county, and president of the Medical Society of Mobile in 1895; a member of the State Board of Censors, and first editor of the *Mobile Medical Journal*; for fifteen years a member, and for seven years president of the school board of Mobile county; died at his home in Mobile, August 19, aged 59.

Robert Wesley Erwin, M.D. Bellevue Hospital Medical College, New York City, 1870; of Bay City, Mich.; a member of the American Medical Association, American Academy of Medicine and Bay City (Mich.) Board of Health; a member of the local board of U. S. pension examining surgeons; a veteran of the Civil War; at one time superintendent of schools of Harrison county, Ohio, and professor of geometry in the Cooper Institute, New York City; died suddenly at Grand Lake, Mich., August 13, from heart disease, aged 67.

George Francis Shears, M.D. Hahnemann Medical College, Chicago, 1880; president and senior professor of surgery in Hahnemann Medical College; and one of the most prominent homeopathic practitioners of the middle west; consulting surgeon to the Cook County, Streeter and Silver Cross hospitals, attending surgeon to Hahnemann Hospital, director of the Chicago Tuberculosis Institute, and assistant editor of the *Clinique*; died at his home in Chicago, August 27, from paresis, aged 52.

Joseph Alison Scott, M.D. University of Pennsylvania, 1889; of Philadelphia; a member of the American Medical Association; fellow of the College of Physicians of Philadelphia, and a member of the Philadelphia Pathological and Pediatric societies; adjunct professor of clinical medicine in his alma mater; visiting physician to the Pennsylvania Hospital; died at the summer home of his sister in Northeast Harbor, Maine, August 13, from heart disease, aged 44.

Casper K. LaHuis, M.D. University of Michigan, Ann Arbor, 1896; of Zeeland, Mich.; formerly of Kalamazoo and a member of the school board; a member of the Michigan State Medical Society and Kalamazoo Academy of Medicine; formerly assistant in obstetrics and gynecology at his alma mater; died at his home, August 12, from tuberculosis, aged 40.

John Wherrell, M.D. Kansas City (Mo.) Medical College, 1889; professor of internal medicine in the Western Eclectic College of Medicine and Surgery, Kansas City, Kan.; founder of the Kansas Normal School, Paola; and for many years superintendent of schools of that city and Leavenworth; died at his home in Kansas City, Kan., August 12, aged 66.

George Washington Moran, M.D. University of Michigan, Ann Arbor, 1892; a member of the American Medical Association; treasurer of the Michigan State Medical Society; surgeon to the American Shipbuilding Company; chief of staff of St. Vincent's Orphan Asylum, Detroit; died in Harper Hospital, Detroit, August 12, from ptomain poisoning, aged 41.

Adelbert G. Gumaer, M.D. University of Pennsylvania, Philadelphia, 1883; of Buffalo, N. Y.; a member of the American Medical Association; for twenty-three years local surgeon to the Lake Shore and Michigan Southern Railway, and surgeon to the Emergency Hospital; died in Santa Monica, Cal., August 1, from heart disease, aged 57.

Peter James Campbell, M.D. New York University, New York City, 1893; a member of the American Medical Association and the Utica (N. Y.) Medical Library Association; formerly health officer of Utica; died at his home in that city, August 10, from acute nephritis, aged 41.

Gioachino Barabini, M.D. University of Palermo, Sicily, 1901; a member of the American Medical Association and the Italian Medical Society; prominent as a worker among the Italian poor of New York City; died at his home in New York City, August 16, from gastroenteritis, aged 34.

Edward Mortimer Hardcastle, M.D. University of Maryland, 1889; formerly principal of the Easton (Md.) High School and Maryland Nautical Academy; a clergyman of the Protestant Episcopal church; died in Easton, Md., August 15, from tuberculosis, aged 41.

Charles Edward Trotter, M.D. Johns Hopkins University Medical School, 1909; acting assistant surgeon U. S. Navy; was drowned August 11, from a life raft, after the sinking of the U. S. Naval tug, *Nezinscot*, off Cape Ann, Mass., aged 25.

George H. Bailey, M.D. Tulane University, New Orleans, 1861; a surgeon in the Confederate service during the Civil War; formerly of Phoenix, Ariz.; died at the home of his daughter in Anaheim, Cal., August 4, from bronchitis, aged 70.

Joseph H. Hobson, M.D. Washington University, St. Louis, 1895; a member of the American Medical Association; formerly a member of the city council and school board of White Cloud, Kan.; died at his home in that city, July 29, from tuberculosis, aged 40.

John T. Martin, M.D. Cincinnati College of Medicine and Surgery, 1871; formerly of Green Camp and Marion, Ohio; a veteran of the Civil War; died in the Old Soldier's Home, Sandusky, Ohio, August 16, from paralysis, aged 65.

John D. Shaw, M.D. Willamette University, Salem, Ore., 1895; of Salem, Ore.; for several years physician to the Oregon State Penitentiary; died in the Salem Hospital, August 6, from cerebral hemorrhage, aged 47.

Joseph Edward Smith, M.D. Georgetown University, Washington, D. C., 1900; a member of the Kentucky State Medical Association; died at his home in Bardstown, August 14, from Hodgkin's disease, aged 32.

Samuel P. Oldham, M.D. Kentucky School of Medicine, Louisville, 1875; died suddenly at his home in New Castle, Ky., August 12, from cerebral hemorrhage, aged 53.

Charles I. Conover, M.D. Albany (N. Y.) Medical College, 1878; died at his home in Charleston Four Corners, N. Y., August 8, from intestinal obstruction, aged 57.

Levi Fulk, M.D. Bellevue Hospital Medical College, 1874; died at his home in New Kingston, Pa., August 8.

Charles Oxford, M.D. University of Berlin, Germany, 1873; died at his home in Omaha, August 6, from pneumonia.

Medicolegal

General Unsoundness of Mind as a Defense to Crime

The Supreme Court of Pennsylvania says, in the homicide case of Commonwealth vs. Hallowell, where the whole defense rested on general unsoundness of mind, that whether this condition can be urged as a sufficient defense against an accusation of crime depends on the extent and degree of the unsoundness. Any variation, however slight, from normal conditions, implies unsoundness in some degree; and ordinarily, when one is said to be unsound mentally, the expression indicates nothing as to the extent or degree of the variation. There is, however, nothing uncertain or indeterminate in these words when they are used to denote the mental unsoundness which exempts from legal responsibility for what otherwise would be felonious and therefore criminal homicide. The words used in this connection have a fixed and definite meaning. They denote a mind so far devoid of understanding that it is unable to distinguish between right and wrong, and is therefore without freedom of moral action. However unsound in mind a man may be generally, it is only when he has lost utterly his power of moral perception that he ceases to be responsible in the eye of the law. Therefore it is that, whenever insanity is set up as a defense to an accusation of crime, it becomes the duty of the trial judge to clearly define to the jury what kind or degree of insanity absolves, to the end that they may intelligently understand the real point at issue and weigh with discriminating judgment the evidence submitted to them.

The trial judge told the jury in this case that the question was not, "was this prisoner of unsound mind? or, if you choose to put it so, was he insane?" Again, he said: "The question is not whether he is eccentric or peculiar, or what these people (witnesses) call unsound." In his instruction the judge was strictly within the law. What the jury were to determine was a question of legal accountability; and, since this could exist even where there was unsoundness, the statement of the judge was not only entirely correct, but, in view of the character of the testimony he was about to review, it was none too direct or positive; for, however correct the defendant's witnesses were in the opinions expressed that the defendant was a man of unsound mind, it was manifest from the facts given by each in support of such inference, with a few exceptions, that the unsoundness they were considering was not that which in law exculpates.

Evidence of general unsoundness is admissible, of course, for it is only when the whole mental condition of the accused is exhibited that the extent or degree of the insanity can be determined.

Admissible Evidence of Injury to Spine

The Court of Appeals of Kentucky says, in Lexington Railway Co. vs. Woodward, a personal injury case brought by the latter party, that a physician who had made an examination of the plaintiff's person qualified himself to testify as an expert, and the examination which he testified he made was sufficient to enable him to give an opinion on the extent of her injuries. He could testify to any physical fact which he found to exist. He was properly allowed to state that the left leg below the knee was smaller than the right, and that this indicated in his judgment a lack of nutrition. It was true that the plaintiff sued for an injury to her spine and hip; but any symptom on the lower part of the leg which would be confirmatory of the testimony as to the condition of the spine and hip was properly admitted. In spinal injury, effects are often shown in other parts of the body, and if there were no such evidence in other parts it would be a circumstance indicating that the plaintiff's spine was not so badly affected as she claimed.

Procedure in Montana After Revocation of License

The Supreme Court of Montana says, in State, on the relation of Gattan vs. District Court, that the relator was, prior to Nov. 23, 1907, a physician duly licensed by the State Board of Medical Examiners. Complaint having been made to the board that he had been guilty of unprofessional and dishonorable conduct, a trial was had and the board revoked his license. He appealed to the District Court, which held trial Nov. 23, 1907, with a jury of six physicians in conformity with the statute, Section 1588 of the Revised Codes of Montana. The trial resulted in a verdict finding the charges sustained and affirming the judgment of the board of examiners, and judgment was by the court entered accordingly.

The relator subsequently filed in the Supreme Court his application for a writ of review to annul the judgment so entered against him. It was alleged that the District Court was without jurisdiction to render and enter the judgment because the jury selected to try the charges was not a legal jury, in that the names of the persons constituting it were not drawn from the regular jury box in conformity with the provisions of law on the subject, but that the jurors were selected under arbitrary order and direction of the court, and that the jury, as constituted, consisted of six persons only, whereas the relator was entitled to have the issue involved tried by a constitutional jury of 12 persons, drawn and impaneled as provided by law for all actions and proceedings in the district. But the application must be denied for two reasons:

1. The relator had a right of appeal from the judgment. While proceedings had under the law before the board of medical examiners touching the granting or revoking of a license may not in any sense be regarded as the administration of a judicial remedy an appeal to the District Court from one of its determinations, whereon a trial of the issue is had de novo (anew), must be regarded as an application to that court for a judicial remedy. The appeal is granted as a method of getting the matter involved before a court that it may be determined judicially. It is a special proceeding commenced in the District Court by the filing of the appeal. In all such proceedings the party aggrieved has an appeal to the Supreme Court, provided he avails himself of his right within one year. He may not permit the time for appeal to lapse and then have the judgment reviewed on writ of review.

2. The application did not question the jurisdiction of the District Court to entertain the appeal from the board to it. The only question made with reference to the proceedings there was as to the action of the court in selecting the jury. Its action in this regard, if erroneous, amounted only to error within jurisdiction, and could not be corrected by writ of review. The application for a writ of review must therefore be dismissed.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

August 21

1 *Life-Insurance in its Relation to Prevention of Tuberculosis. S. A. Knopf, New York.
2 *Report of Nine Cases of Pellagra. E. D. Bondurant, Mobile, Ala.
3 *Value of Microscopic Examination of the Prostatovesicular Secretion in the Diagnosis and Prognosis of Gonococcus Infection. A. L. Wolbarst, New York.
4 *Multiple Sclerosis. C. D. Fox, Philadelphia.
5 Malformations of the Nasal Septum. J. P. Lewis, Waltham, Mass.
6 Flat Feet. M. Strunsky, New York.
7 *Conservatism in the Use of Flatfoot Plates. R. O. Meisenbach, Buffalo.

1. **Life Insurance and Tuberculosis.**—Knopf believes that in the future the insurance companies will be able and glad to aid in the distribution of literature and information on tuberculosis, and especially its prevention among the public with whom they deal; that the life-insurance agent may by word of mouth impart this instruction, that the people who undertake industrial insurance are alive to the necessity of prevention of tuberculosis, and that they will gladly insure their children against tuberculosis. The Metropolitan Life Insurance Company desires to erect a sanatorium for its employés, which may later be used by policy holders.

2. **Pellagra.**—Bondurant observed a considerable number of cases among negroes in the insane asylum at Mt. Vernon, Ala. In his private practice he saw none before August, 1907, but from that time until May 1, 1909, he saw 9 out of 590 cases seen in all. He reports 9 cases in detail, most of them having been fatal.

3. **Microscopic Examination of Prostatovesicular Secretion.**—Only those cases in which 3 or more examinations were made of the prostatovesicular secretion are included by Wolbarst in his paper. He selected 35 cases because these cases emphasize certain features of this subject that are of more than passing interest. From 3 to 19 examinations of massaged secretion were made in each of these cases, a total of 240 examinations. These patients have been divided into two classes: (1) Those who showed clinical symptoms and came to be treated for them—21 in number; and (2) those who did not show clinical symptoms, but came for examination for some other complaint, or for advice preparatory to marriage—14 in number.

As a result of these investigations, Wolbarst believes that a man may be "cured" of his gonorrhea, so far as symptoms are concerned, and his prostate and adnexa may contain gonococci; that gonococci may be found in clear urine; that gonococci may persist in the prostate for many years, and show no symptoms of any kind; they may not be infectious necessarily; that we can not tell whether or not any given prostate contains gonococci, except by making a large number of examinations of the massaged secretion after stimulation and irritation by silver nitrate, etc.; that though it is conceded that cultures are more certain, when successful, than microscopic examinations, practicing physicians must rely on the microscope for their results. Besides, a negative finding in a culture tube is no more enlightening as to the absence of gonococci in the prostate than is a negative finding on a microscopic slide. In either case the thing sought for has merely not been found, which is a different thing from saying that it is not there. The gonococcus should be sought for until every means is exhausted.

4. **Multiple Sclerosis.**—Fox reports a case in which at first examination the absence of nystagmus, intentional tremor, and impairment of speech caused the incorrect diagnosis of transverse myelitis. Hysteria made its appearance late. The diagnosis was based on transitory but almost total paralysis, the induction of hypnoidal states by lateral fixation of the eyes, and the appearance of an apparently causeless series of syncopal attacks. There were no other stigmata of hysteria except contraction of the visual fields.

7. **Flatfoot Plates.**—Meisenbach emphasizes the harm that may be done by the promiscuous use of flatfoot plates when applied by persons without skill and knowledge.

Boston Medical and Surgical Journal

August 19

8 *Intravenous Administration of Strophanthin in Other Than Cardiac Disease. A. K. Stone, Boston.
9 Psychopathology. B. Sidis, [illegible]
10 Stenosis of the Larynx. R. [illegible] ore.
11 *Tubal Abscess of Unusual [illegible] by a Bacteriuria of Renal Origin. [illegible]
12 Leprosy. C. E. Wells, Tewk[illegible]
13 *Two Unusual Cases of Sarcoma. W. A. Smith, Springfield.

8. **Intravenous Administration of Strophanthin.**—Stone agrees with Liebermeister that the intravenous injection of strophanthin enables one to carry along a certain number of severe cases of pneumonia until the patient is able to eliminate the toxin of the pneumococcus and to get on the sure road to recovery. He says that in certain cases of collapse, due to cardiac weakness, the physician has in strophanthin a drug which will act promptly and powerfully and enable the patient to rally, and the heart to resume its work. The large amounts of urine which have been passed by these patients make it seem that the strophanthin has also to do with the production of what Meltzer has called the "life-giving diuresis," by means of which the toxic products are more rapidly eliminated than would otherwise be the case. When a patient has grown weaker and weaker in the course of his disease, whether it be pneumonia or typhoid fever, the cardiac stimulant action of strophanthin will apparently have little effect on the gradually flagging heart action.

In a case of attempted suicide by means of carbolic-acid poisoning, combined with gas poisoning, the patient had a very rapid, almost tic-tac, heart, which was regular, but the sounds were very faint, the pulse of small volume and poor tension. The stomach was washed out; strophanthin was given in a half-milligram dose, and the pulse soon became markedly stronger, and the next morning was very good. There was suppression of urine, but after twelve hours 15 ounces of urine were drawn, and after this the amount of urine excreted rose to 40 ounces in the next twenty-four hours. In a sudden postoperative collapse, an almost imperceptible pulse of about 150, became fairly strong, and 120 in rate within five minutes after the administration of a milligram of strophanthin. From that time on the pulse grew stronger and the patient was no longer a source of anxiety.

11. **Tubal Abscess.**—Chute believes his case to be of interest not only because of the unusual position of the tubal abscess, but also from the fact that both kidneys, without giving evidence of any infection, were excreting great numbers of organisms. The patient, a woman aged 28, had been delivered of her first child toward the latter part of September. The labor was a long one, and the child was stillborn. According to the history, delivery was followed by a serious postpartum hemorrhage, and later by an attack of sepsis, lasting ten or twelve days. After delivery, it was noticed that there was a visible mass to the left and below the umbilicus. This was supposed to be a much-enlarged uterus. The woman was treated locally for subinvolution, but without effect on the mass. It occupied the place where this patient, when about seven months pregnant, had had an attack of very acute pain, lasting some hours and requiring morphin. The upper limit of this mass was just below the level of the umbilicus. Though there was moderate distention, the mass was perfectly evident on simple inspection. There was tympany over it. It was immovable and moderately tender. Vaginal examination showed a uterus that was unusually high, but not much enlarged or fixed. No connection could be made out between the uterus and the mass. Nothing could be felt in either broad ligament.

An incision over the most prominent part of the tumor showed a mass covered with thickened omentum that lay just to the inside of the descending colon and was adherent to it. The uterus was pulled up and tilted to the left by the left tube, which disappeared into the mass about three-fourths of an inch from its junction with the uterus. A portion of the left ovary projected from the mass above. The left broad ligament was stretched out in such a way as to cover the true pelvis on the left. The ureter could be easily seen coursing through the lower part of the ligament. In attempting to separate this mass from the colon, an abscess cavity was opened and some drams of offensive pus escaped. The cavity was drained by a tube and wicks. No attempt was made at its removal. After the operation, drainage from the cavity was profuse. Gas was passed by rectum and feces as a result of enemas. The distention, however, increased and there was marked peristalsis. On the second day there was pain in the right iliac region, with rigidity at this point. On the third day a fecal fistula appeared, evidently from a perforation of the colon at the point where the attempt was made to separate it from the mass. Though the fistula discharged profusely, it did not affect the distention to any considerable degree. On moving the gauze that had been used to wall off the pelvis, there was a gush of amber-colored fluid from the right side of the pelvis. This fluid was clear and not offensive. No cultures were taken of it. The patient died on the fourth day after operation, apparently as a result of the localized peritonitis in the right pelvis and the chronic sepsis from which she had been suffering. No autopsy was obtained.

13. **Sarcoma.**—The patient, a woman, 73 years of age, had a small lump in the right side of the neck 51 years ago. There is no pathologic report of the specimen removed. There was no return of the trouble until nine years ago, when a bunch began to grow at the site of the old scar. At the time of its removal the tumor was the size of an orange. There is no pathologic report of this specimen obtainable. Two years later, seven years ago, another bunch appeared in the same place and was removed. No pathologic report can be found. December, 1906, she was admitted to the hospital for a growth in the right side of the neck, extending from the median line in front to the median line in the back. Nearly the entire surface of the growth was sloughing, with an intensely fetid odor. The tumor was removed in one mass with a wide skin margin by Smith. The external jugular vein and the facial artery were ligatured and divided; the submaxillary gland and all palpable lymphatic glands were dissected out. It was impossible to close the wound, which, however, healed promptly by granulation without skin grafts. The tumor weighed one pound and was a round-cell sarcoma. In June, 1908, the patient was again admitted to the hospital, presenting in the old scar a tumor the size of an egg. The tumor mass and several glands were removed and the wound sutured. The incision healed by first intention and the patient was discharged in ten days.

The second patient, a woman 72 years of age, accidentally struck her knee against a projecting stick in a wood pile. Two weeks later she noticed a hard lump on the injured knee at the site of the abrasion, which had healed promptly. In six weeks it was the size of an egg, bluish-black in color, and proved to be a small round cell sarcoma.

New York Medical Journal

August 21

14 *Leprosy. C. A. Penrose, Baltimore.
15 *Epidemiology of Leprosy. A. S. Ashmead, New York.
16 *The Pharyngoscope: New Method of Examination of the Nasopharynx and Larynx. H. Hays, New York.
17 *Roentgen Rays in Diagnosis of Carcinoma of the Stomach. G. E. Pfahler, Philadelphia.
18 Hysteria in an Adult Male. R. E. Coughlin, Brooklyn.
19 *Geriatrics. I. L. Nascher, New York.
20 *Action of Glandular Extracts on Tetany after Parathyroidectomy. I. Ott and J. C. Scott, Philadelphia.
21 Acute Uremia Resulting from Turpentine. W. A. Gills, Richmond, Va.

14-15. **Leprosy.**—The papers by Penrose and Ashmead are an excellent exposition of present knowledge of leprosy, especially with reference to the disease as it appears in the United States and in the Bahama Islands.

16. **The Pharyngoscope.**—Hays describes an instrument which, he says, will be an aid to the expert in difficult cases in which either the patient's oropharynx is sensitive or narrow, or in which it is impossible to see clearly the various parts that one wishes to examine. The latest model of the pharyngoscope is composed of a horizontal and a vertical shaft which join each other at right angles, at the outer third, so that the instrument may be used as a tongue depressor. The inner portion of the horizontal shaft consists of a central circular tube with an electric light carrier on either side, the three components being incorporated in a flat piece of metal. From the inner end project the two electric lights which are water tight, give an intense illumination and become only warm enough to keep vapor off the lens. In the central tube is inserted the telescope, which is made on the principle of the Otis cystoscope. To the eye-piece is attached a little metal ball which indicates the position of the lens. This horizontal shaft, including the telescope, is about eight inches long. The widest portion of the instrument, which is at the extreme inner end, is less than five-eighths of an inch, and the flat metal shaft itself measures less than one-half an inch in diameter. The vertical portion is about six inches long and half an inch wide. It is attached to the horizontal portion by a screw joint, and contains the wires for connection with the rheostat or dry cells. Near its upper portion is an arrangement for cutting off the electric current so that the lamps need not be turned on until the instrument is in the mouth.

On account of the cement which holds the lens in place, the instrument can not be boiled, but like the cystoscope it is best disinfected by formalin. For that purpose a metal box is supplied with the instrument which is large enough to contain the horizontal shaft (except the eye-piece), which has a receptacle at one end for formalin tablets and cotton. The instrument is inserted into the mouth like a tongue depressor until the inner end of the telescope is about one-sixteenth of an inch from the pharyngeal wall. When once in place it is held firmly by the examiner, the patient is told to close his mouth and to breathe quietly through the nose. As soon as the mouth is closed, it is observed that the muscles are relaxed and that the nasopharyngeal space is much enlarged. An excellent view of the parts to be seen can be obtained by gazing through the eye-piece of the instrument. In order to keep the patient from breathing in the examiner's face a small mica plate is supplied which is placed between the telescope and the horizontal shaft.

17. Abstracted in THE JOURNAL, May 15, 1909, p. 1611.

19. **Geriatrics.**—Nascher suggests this term as an addition to our vocabulary to cover the same field in old age that is covered by the term pediatrics in childhood.

20. **Glandular Extract and Tetany.**—Ott and Scott made 133 observations on 60 cats and 2 dogs. The cats were first etherized; then the parathyroids were removed under antiseptic precautions. The thymus was always examined for parathyroids. The cat has usually four parathyroids, but more may exist. In young cats, the parathyroids have a looser anatomic relation to the thyroid than later in life. In the cats the parathyroids are about the size of a date seed and have the color of a miliary tubercle. In many cases some of the thyroid was removed in the desire to obtain all the parathyroids, but enough thyroid was left to maintain its functions. When removal in part of the parathyroids was ineffectual to produce a tetany, then the thyroid was also removed and they always found it contained a parathyroid larger than the normal. In cats when all the parathyroids were removed symptoms of tetany came on in about forty-eight hours, as a rule. The first symptoms were a slowness in movement and a state of apathy. The animals were disposed to remain in one place. First, as a rule, there developed a lifting of the posterior extremities and sometimes of the anterior, as though the animal had been stepping in water. The posterior extremities were stifflike in movement and spread apart in their gait. Then trembling ensued in the extremities, followed by convulsions of the whole body. In the convulsive state the animal usually made loud cries before and after the convulsion. Conjunctivitis was frequently noted in the tetania parathyreopriva. The sense of hearing, sight, smell and taste remained. They did not respond to petting. They also had the projecting abdomen noted by Hagenbach.

Lancet-Clinic, Cincinnati

August 14

22 Some Predisposing Factors of Malignant Disease of the Uterus. G. H. Baker, Cincinnati.
23 Hebosteotomy vs. Cesarean Section, When the Latter is Only Relatively Indicated in Cases of Narrow Pelvis. E. G. Zinke, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

August 13

24 The Epileptic. W. F. Drewry, Petersburg.
25 The Play Impulse and Public Health. W. A. Lambeth, University.
26 Treatment of Angina Pectoris with Report of Cases. A. G. Brown, Richmond.
27 Rheumatic Fever. A. J. Burkholder, Mount Sidney.
28 *Epidemic Pneumonia. S. Mann, Moyock, N. C.
29 The State's Duty in the Fight Against Infectious and Contagious Diseases. J. W. Halford, Chalybeate Springs, N. C.
30 External Accidental Hemorrhage in Case of Normally Situated Placenta. O. Marshall, Crewe, Va.

28. **Epidemic Pneumonia.**—In family P., of 10 exposed, 7 contracted the disease. In family C., of 8 exposed, 4 contracted the disease. In family R., of 6 exposed, 2 contracted the disease. In family R., of 5 exposed, 2 contracted the disease. Besides these 14 cases, 3 cases occurred independently; there was no case of reinfection that Mann knew of. All except 2 of the patients were under 12 years of age, and the physical signs in some of these cases for a time were frequently indefinite. There was considerable gastric and abdominal disturbance. Mann followed the usual expectant plan of treatment with the result that all his patients recovered.

American Journal of Public Hygiene, Boston

May

31 *Typhoid Fever in the Province of Manitoba, with Special Regard to Winnipeg. R. M. Simpson and A. J. Douglas, Winnipeg, Canada.
32 [illegible] id in the Middle West. J. S. Pierce, [illegible]
33 *[illegible] eaks of Typhoid Due to Water, Milk, [illegible] F. Anderson, Washington, D. C.
34 *[illegible] H. Albert, Iowa City, Ia.
35 Investigation of Typhoid Epidemic at Sheboygan, Wis. J. T. B. Bowles, Madison, Wis.
36 Morbidity and Mortality Statistics of Typhoid in the Middle West. C. A. Harper, Madison, Wis.
37 *Epidemiologic Diagnosis and Treatment of Typhoid Outbreaks. H. W. Hill, Minneapolis.
38 *Typhoid in the South. E. C. Levy and A. W. Freeman, Richmond, Va.
39 A Method for the Determination of Nitrates in Sewage and Waters of High Chlorin Content. H. C. McRae, Baltimore.
40 Dextrose vs. Lactose for Detecting the Colon Bacillus. W. R. Stokes and H. W. Stoner, Baltimore.
41 A Method for the Staining of Negri Bodies. D. L. Harris, St. Louis.
42 The Coordination of Laboratory Work and Inspection in [illegible]. W. R. Stokes and T. M. [illegible]
43 [illegible] Tests for Sewage and Sewage [illegible] W. A. Horton.
44 *The Result of Re-incubation and Re-inoculation of Atypical Diphtheria Cultures. B. R. Rickards, F. H. Slack and B. L. Arms, Boston.
45 Report of the Committee on Standard Methods for the Examination of Air. C. E. A. Winslow, E. H. Rickards, J. Weinzirl, J. B. Thomas and G. A. Soper, Boston.
46 Plural Deaths in Families as an Index of the Fatality of Disease. C. V. Chapin, Providence, R. I.
47 Limitation of the Application of the Crude Death Rate in Determining the Healthfulness of Localities. S. J. Byrne, New York City.
48 Mortality Statistics in Canada During the Past Decade. C. A. Hodgetts, Toronto, Ont.
49 Problems of Quarantine in Contagious Disease Work. F. G. Curtis, Newton, Mass.
50 Management of Infectious Diseases in Rural Municipalities. I. Cleghorn, Baldur, Manitoba.
51 Disinfection of Rooms. B. R. Rickards, Columbus, O.
52 *The Pleasures and Hopes of the Health Officer. C. V. Chapin, Providence, R. I.

31, 33, 34, 37, 38, 44. Abstracted in THE JOURNAL, Sept. 12, 1908, pp. 940, 941.

52. Published in full in THE JOURNAL, Feb. 27, 1909, p. 686.

Journal Oklahoma State Medical Association, Muskogee

July

53 Class of Conditions Remarkable for Obscurity and Difficulty of Diagnosis, and Meagerness of our Clinical Knowledge. A. W. White, Oklahoma City.
54 Malingering. R. E. Runkle, Reno.
55 The Ovary: Its Conservative and Radical Attention. C. N. Ballard, Oklahoma City.
56 Drainage in Abdominal Surgery. C. Blickensderfer, Tecumseh.

West Virginia Medical Journal, Wheeling

July

57 Immunity—Its Application in the Therapy and Diagnosis of Tuberculosis. W. M. Babb, Keyser.
58 Tuberculosis—Opening the Eyes of the Layman. J. T. Carskadon, Keyser.
59 The Tuberculosis Exhibit in Wheeling. H. B. Jones, Wheeling.
60 The Tuberculosis Exhibit in Clarksburg. C. N. Slater, Clarksburg.

Archives of Ophthalmology, New York

July

61 Recurrent Hemorrhages in Retina and Vitreous Followed by Retinitis Proliferans in Both Eyes in a Man with Surgical Tuberculosis. C. J. Kipp, Newark, N. J.
62 A Fibrous Pseudolens Taking its Origin From the Tunica Vasculosa Lentis. W. Czermak, Prague, Austria.
63 The Occurrence of Opsonins in the Aqueous Humor. A. Knapp, New York.
64 Conjunctivitis and Purulent Inflammation of the Excretory Ducts of Meibomian Glands Caused by an Encapsulated Gram-negative Diplobacillus. O. Landman, Toledo, O.
65 Chorioretinitis Tumida. C. J. Kipp, Newark, N. J.
66 Transient Cycloplegia Due to Glycosuria. W. H. Roberts, Pasadena, Cal.
67 Re-Attachment in Iridodialysis: A Method Which Does Not Incarcerate the Iris. P. C. Jameson, Brooklyn, N. Y.
68 Visual Disturbance Due to the Use of Hair Dye Containing Anilin. E. Berger, Paris, France.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

August

69 *Mechanism of Occlusion of the Fallopian Tube. E. Ries, Chicago.
70 *Constipation in Women. A. D. Kohn, Chicago.
71 Puerperal Sepsis. H. M. Stowe, Chicago.
72 Gynecology in the Young. J. V. Young, New York.
73 Operative Treatment of Pelvic Infection. G. H. Mallett, New York.
74 Prevention of Perineal Lacerations. E. K. Macomber, Amsterdam, N. Y.
75 *Induction of Labor at Term as a Matter of Routine. A. H. Wright, Toronto.
76 Inversion of Uterus of Two Years and Four Months Duration Cured by Posterior Colpotomy and Posterior Section of the Uterus. E. Sealy, Newark, N. J.
77 Six Successful Cesarean Sections. G. M. Boyd, Philadelphia.
78 *New Hydrostatic Dilator. C. B. Reynolds, Philadelphia.
79 Cesarean Section at Term for Tumor of Retrovaginal Septum. R. Cronson, New York.
80 Sixty Cases of Congenital Hypertrophic Stenosis of Pylorus. C. E. Broderick, Kansas City, Mo.

69. **Mechanism of Occlusion of Tube.**—Ries points out that the infectious contents of an inflamed tube escape through the abdominal end, and we find, therefore, here the oldest changes in the peritoneum, such as chronic thickening of the serosa. This makes a peritonitic ring around the ostium out of a

peritoneal ring. The ring need not be a complete one; part of the ring may be formed by any organ that the contraction of the peritonitic scars brings together. These peritonitic scars, like all peritonitic scars on hollow organs, have a tendency to contract. The escape of fluid from the tube is thereby impeded; the swollen folds of the tube have not sufficient room; the tube becomes dilated; the wall of the tube becomes stretched. The fibrous cicatricial ring gives less than any other part; therefore, the muscular coat and its serosa becomes stretched more than the ring around the ostium. With the inflammation subsiding, as tubal inflammations so frequently do, the contents are absorbed or discharged in one direction or another, the swelling of the folds subsides, the walls become too large and loose. The peritonitic ring thereby gains in mobility and can contract further over the fimbriæ.

The fimbriæ escape being pinched by the ring, or, rather, the fimbriæ being covered with epithelium can not adhere to the peritonitic ring, and escape inward without inversion. The ring can now close completely, and we have a closed tube. The union of the peritonitic ring is a seroserous one, and is therefore—when recent—not very firm, so that by squeezing it, we can force it open and see the fimbriæ inside. At this the septic contents of the tube extend into the channel between the mucous surfaces of the fimbriæ. The remnant of peritoneum on the inside of the funnel and on the serous surfaces of the fimbriæ being in a condition of peritonitis, the peritoneal surfaces can fuse with each other in many conceivably irregular ways, while the mucous surfaces of the tubal fimbriæ being covered with epithelium, do not fuse. The remnant of the cleft between the mucous surfaces of the fimbriæ is then sometimes seen as a small dimple on the inside, which leads to an obturating membrane—the original peritonitic ring.

The fimbriæ are now bunched on the inside of the tube, not really inverted. But if the fluid contents of the tube are again absorbed or discharged into the uterus and the tube collapses, the fimbriæ can not open again on account of the peritonitic adhesions outside, but the bundles of fimbriæ can become more prominent on the inside now, because the distention has stopped, and then such specimens as Orth mentions can be obtained. A new dilatation of the tube will then tend to flatten out all folds of the mucosa, and if the seroserous union between the fimbriæ is strong enough the unyielding lines of fusion will stand out like the radii of a rosette.

70. **Constipation in Women.**—The treatment of chronic constipation as outlined by Kohn is dietetic, mechanical and medicinal. There are, he says, a certain number of cases which can be improved by diet alone. Food rich in cellulose and other waste matter is useful in a large proportion of cases. Best of all is a pure vegetable diet, combined with cooked fruits and coarse cereals. To these may be added certain chemical stimulants, such as common table salt, fats, best taken in the form of butter or olive oil (if the latter is well borne), sugar of milk and malt marrow. If still unsuccessful, one may make a trial of the various bulky mechanical stimuli to the intestine, such as bran, vaselin, if it can be taken, and even sand. If all these dietetic schemes fail, the physician may resort to mechanical means before trying medicines; Kohn has found them valuable adjuvants to the diet in a number of cases. Of these, the best are rectal electricity, given three or four times a week with the abdominal pad localized over the affected area. Any kind of rectal electrode may be used and the treatment given for ten minutes. Faradization with an interrupter is the most effective in bringing up the tone of the bowel in atonic cases, whereas in spastic conditions galvanization carefully applied, with the anode in the rectum, is often beneficial. Other means, such as massage of the diseased portion of the bowel, cold sprays, either of ether or ethyl chlorid, may be of assistance. In stubborn cases oil injections or cool salt water, the last especially when the sphincter is weak, may be added. If, however, as often occurs, the patient drifts back to the old state as soon as the treatment is stopped, or often in spite of all treatment, one must call into requisition the various cathartics.

75. **Induction of Labor at Term.**—During the last three years Wright has induced labor within three days after the patient has reached term as a matter of routine in all cases. The following report will illustrate to some extent the methods employed and the results obtained: Mrs. B., aged 30; second pregnancy, expected confinement, June 10. On the evening of June 10, the nurse was summoned, and on her arrival prepared the patient for labor. On the following morning a vaginal tampon was introduced, after which the patient got up and went about the house as usual, suffering no inconvenience from the tampon. Next morning, June 12, the tampon was removed and another introduced. When this was removed on the following day, June 13, the cervix was softened, os softened and slightly dilated, pelvic floor and vulva softened and dilatable. A bougie was then introduced into the uterus and a tampon into the vagina. Uterine contractions commenced about midnight, fourteen hours after introduction, and the child was born four hours after. Labor was easy.

It was noticed in this and other similar cases that it was easy to induce labor at term. The patient is not, as a rule, excited or alarmed. *After the tamponade the patient* can generally go about and do her ordinary work, and sometimes does not even know that the vagina is plugged. As a rule, she does not know after the introduction of the bougie that anything of the sort is in the uterus. After such introduction, however, it is not considered advisable to allow the patient to walk about. The vaginal tampon appears to have a two-fold effect: First, it softens and dilates the cervix and tends to cause uterine contractions. Second, it softens and dilates the vagina, pelvic floor, and perineal body in a way that makes expulsion or extraction through these parts much more easy than under ordinary circumstances.

78. **New Hydrostatic Dilator.**—Reynold claims that his hydrostatic dilator has for its chief advantage the ease with which it can be introduced into the parturient cervix canal without resorting to an anesthetic. It consists of a reinforced rubber bag with a hollow rubber stem perforated with four holes and a solid rubber tip which extends to within one-half inch of the base of the bag. In its collapsed condition it resembles a right-angle triangle, the stem being a part of the perpendicular. To introduce the bag, a blunt-pointed metal stylet is inserted into the rubber stem until it impinges against the solid rubber tip; the bag is then rolled around the rubber stem as one would roll an umbrella. The rolled bag, which is about the size of one's middle finger, is held in the palmar surface of the hand, with the tip of the bag even with the tips of the index and middle fingers. The labia are separated, and the bag, anointed with glycerin, is inserted into the vagina until the finger-tips touch the posterior lip of the cervix. Force is exerted on the stylet by the external hand and the bag is gently pushed through the cervical canal. The fingers of the internal hand hold the bag in position while the stylet is being withdrawn. Sterile water is then forced through the rubber stem causing the bag to unroll and become distended. A Davidson or special syringe can be used for the purpose. When the bag is distended it is cone-shaped. A clamp can be placed on the rubber stem and traction made, if indicated.

Wisconsin Medical Journal, Milwaukee

July

81 *Medicine in Wisconsin. G. E. Seaman, Milwaukee.
82 Relationship Between Bovine and Human Tuberculosis. W. G. Clark, Marinette.

81. Abstracted in The Journal, July 24, 1909, p. 315.

California State Journal of Medicine, San Francisco

August

83 Psychotherapy. W. J. Barlow, Los Angeles.
84 Trichinosis. A. M. Tower, Lodi.
85 *Hypertrophic Pyloric Stenosis with Autopsy Findings. A. B. Spalding, San Francisco.
86 Chyluria with a Vesicle Sinus. S. Pope, Watsonville.
87 Therapeutics. J. L. Avey, Redlands.
88 Sanitary Supervision of Communicable Diseases by the Department of Public Health. R. G. Brodrick, San Francisco.
89 Obstruction of Common Duct in Chronic Cholecystitis Without Stone. A. S. Lobingier, Los Angeles.
90 *Galactoxismus. W. W. Roblee, Riverside.
91 Professional Work as it Connects with the *Medical Society* and the General Public. W. T. Barry, Santa Barbara.

92 The Toxemic Factor in Rheumatoid Arthritis. C. C. Warden, Los Angeles.
93 Relation of Rat Leprosy to Human Leprosy. W. B. Wherry, San Francisco.
94 Transient Cycloplegia Due to Glycosuria. W. H. Roberts. Pasadena.

89. **Hypertrophic Pyloric Stenosis.**—The stenosis in Spalding's case seems to have arisen from an hypertrophy of every muscular integer of the pyloric division of the bowel, and probably dated back to a very early period of the child's intrauterine life.

90. **Galactoxismus.**—Probably the most dangerous poisons occurring in milk are those resulting from bacterial growth. This should lead to renewed efforts looking toward an uncontaminated milk supply. The bacterial growth should be reduced to a minimum and especially is that true of the colon group. Mineral poison may occur in the milk from the use of metal containers, but this is not a common source of poisoning. Of the medicines excreted by way of the milk, senna and calomel should be especially borne in mind. Probably no other drugs, when given to the mother in ordinary medicinal doses, would appear in the milk in sufficient quantities to poison an infant. Fruit acids and alcohol are not thus excreted. In California, aside from the plants which affect the taste, odor and color of the milk, but are not otherwise of moment, probably the death camas is the only one that needs to be watched for and this only in the northern valleys. This question, however, should be more carefully studied, and it is quite possible that more plants will be found to poison the milk. Dairy cattle should be fed on well-cured alfalfa or wheat hay, and not be allowed to wander at random in a pasture. Even harmless weeds often change the odor and taste of the milk, and, doubtless, to some extent, tend to upset the infant's digestion.

Journal Tennessee State Medical Association, Nashville

July

95 *[illegible] er, Memphis.
96 *[illegible] W. Brandau, Clarksville.
97 [illegible] and Partially Opaque Lens in its Capsule. L. B. Graddy, Nashville.
98 Intubation and Antitoxination in the Worst Forms of Laryngeal Diphtheria. J. M. Troutt, Jackson.
99 *Physiologic Laws Governing the Action of Purgatives. G. E. Pettey, Memphis.
100 The State Sanatorium in Prevention and Cure of Tuberclosis. D. L. Wilder, Knoxville.

95, 96, 99. Abstracted in THE JOURNAL, May 1, 1909, pp. 1450, 1451.

American Journal Medical Sciences, Philadelphia

August

101 Achylia Gastrica. [illegible] Y.
102 *Duodenal Ulcer an [illegible] rn. New York.
103 *Cl[illegible] [illegible] cines in Septic [illegible] New York.
104 Ac[illegible] ase. L. Jurist, Philadelphia.
105 *The Typhoid Cutaneous Reaction. C. Floyd and W. W. Barker, Boston.
106 Sarcoma of the Stomach: Two Cases. L. Clendening, Kansas City, Mo.
107 Endemic Amebic Dysentery in New York: Its Distribution in North America. H. S. Patterson, New York.
108 Blood Cultures in Human Glanders. B. B. Crohn, New York.
109 *Simple Method of Estimating the Common Variations and Deformities of the Foot. H. O. Feiss, Cleveland, O.
110 My Simple Method for the Quantitative Determination of Pepsin in a Given Gastric Juice. H. Illoway, New York.
111 Adenofibroma of the Male Breast. R. T. Woodyatt, Chicago.
112 Oculomotor Paralysis Accompanied by Facial Palsy, Neuroparalytic Keratitis and Hemiplegia. B. Chance, Philadelphia.
113 *Insanity, Responsibility and Punishment for Crime. J. J. Walsh, New York.

102. **Duodenal Ulcer.**—Einhorn says that the treatment should at first be medical. In the mild cases regulation of the diet (frequent meals, abstention from highly seasoned substances, acids and too fatty foods), improving the general condition by means of iron, arsenic, cold sponging, good air, avoidance of bodily exercise, and the use of alkalies, are sufficient to effect a considerable amelioration, if not a cure. In several cases, olive oil (two tablespoonfuls morning and evening) seemed to be of service. In graver cases of duodenal ulcer (hemorrhages, severe pain, etc.) a strict ulcer cure, with rest in bed and rectal elimination, and afterward fluid diet, must be instituted. In these cases large doses of magnesia and bismuth are of benefit; calcined magnesia, 0.5 gm. (8 grains) bismuth subnitrate, 2 gm. (30 grains), in powders —one powder three times a day, one-half hour before meals. If a strict rest cure has been unsuccessful, or if we have to deal with severe hemorrhages endangering life, and returning frequently, or if obstinate spasm of the pylorus occurs, associated with severe pains in the pyloric region and slight peristaltic restlessness of the stomach, an operation (usually gastroenterostomy) is indicated.

In duodenal ulcer the clinician must advise surgical treatment sooner than in gastric ulcer, as the former, through its complications (hemorrhages, perforations, stenosis of the pylorus), endangers life much more readily than the latter. Gastroenterostomy in these cases is fortunately attended with good results. The ulcer will then soon heal, as the gastric juice does no longer flow over the ulcerated surface in the duodenum or irritate it. At all events, the dangers of hemorrhage, perforation, and pyloric stenosis are thereby prevented.

103. Abstracted in THE JOURNAL, June 5, 1909, p. 1875.

105. **Typhoid Cutaneous Reaction.**—In a previous paper by Floyd and Barker it was shown that cellular sensitiveness, as shown by the ophthalmic test, lasted only as long as the active stage of the disease. They then sought to determine, if possible, if this sensitiveness affected the skin as well as the conjunctiva, and if so, whether it could be used diagnostically. Typhoid bacilli of high virulence were grown in pure culture on agar-agar for twenty-four hours, at 37 C. The growth was then washed off with normal saline solution and the emulsion incubated for four days. At the end of this period it was sterilized in a hot water bath at 60 C. for one-half hour, and then standardized after the method of Wright. The sterile emulsion was then centrifuged and the clear supernatant fluid used for inoculation. The solution used was considerably stronger than that used in the ophthalmic test, being the extract of one billion bacilli. In some instances centrifugalization was omitted and the whole emulsion used for inoculation, with the result of more marked reactions. A standard solution was used in all instances, and not an emulsion of the homologous bacillus in the individual case. In making the test, exactly the same technic was followed as in obtaining the cutaneous reaction in tuberculosis. In all, there were 48 inoculations on 47 patients, of whom 30 were ill with typhoid fever, 2 with *Bacillus paratyphosus* injection, 2 with unclassified fever (clinically not different from typhoid fever), 8 with tuberculosis, 1 with pneumonia, 1 with acute articular rheumatism, 1 with pernicious anemia, and 2 were apparently normal individuals.

Of the typhoid fever cases, the reaction was positive 19 times, negative 9 times, and rendered unsatisfactory by the patient twice. One of the cases of unclassified fever responded to the test, although giving no other evidence of typhoid infection. Neither of the cases of paratyphoid fever gave any reaction whatever. With the exception of a slight reaction in the patient having pneumonia, all the definite nontyphoid cases gave no reaction. All the positive reactions occurred during the active period of the disease, the single patient who was inoculated twice giving a much more striking result at the first inoculation than at the second. The failure of the cases of *B. paratyphosus* infection to respond to the test may be due to the different character of the organism causing the infection. No attempt has been made to discover how early this reaction appears in the course of the disease. The value of the reaction in diagnosis is problematic.

109. **Deformities of Foot.**—In examining the malformations of the body there is no process more valuable than that of studying the relationship of bony landmarks to one another. In the case of the foot, no such method has ever been advanced, and with this in mind, Feiss selected certain landmarks for study. The ones chosen are the lower posterior corner of the internal malleolus, the tubercle of the scaphoid, and the lower tubercle on the head of the first metatarsal. In order to make proper observations, a standard method of estimation had to be applied. A wooden box was constructed, consisting of three sides—a base, a posterior side, and a lateral side. Its dimensions were 12x12x5 inches. The box was placed on the seat of an ordinary chair. The right foot was

used. The subject stood on the floor with the left foot straight, and the right knee bent. Then the right foot was placed in the box, the calf just touching the edge of the box, and the heel resting in the corner. The weight of the body was therefore transmitted through the left leg. In this way the foot could be examined in a definite and uniform position without weight-bearing.

The points marked were the posterior inferior corner of the internal malleolus, the tubercle of the scaphoid, and the lower tubercle of the first metatarsal. The distance of the scaphoid tubercle from the line connecting the internal malleolus with the lower tubercle of the head of the first metatarsal was measured as follows: A thin transparent celluloid rule provided with a scale was applied to the foot so that its upper edge coincided with the dots on the head of the first metatarsal and on the corner of the internal malleolus. Then the distance of the tubercle of the scaphoid from the edge could be read through the transparent rule by means of the scale (the corners of this rule were cut off so that they would not interfere with the sides of the box. The average age of the 100 young men was found to be 21.6 years, the youngest being 17 and the oldest 34 years. The average distance of the tubercle of the scaphoid from the lines connecting the internal malleolus with the lower tubercle of the head of the first metatarsal was found to be 0.49 inch. In only 9 cases was the tubercle less than one-fourth inch below the line, and in only 4 cases was it more than three-fourths of an inch below the line. Therefore the great majority of cases show the tubercle depressed from one-fourth of an inch to three-fourths of an inch, which in itself is a large variation (one-half inch).

113. **Punishment for Crime.**—Walsh holds that the term insanity is so vague that its use as a plea to enable the criminal to escape punishment is not justifiable in the present state of our knowledge. Responsibility differs in different individuals, but it is never quite eliminated, except in the absolute idiot. For those of lowered mentality, even the animals, punishment has a good effect. Punishment is not revenge, but is meant to deter the individual criminal, and above all to deter others tempted to criminal acts. Punishment is more needed for those of lowered mentality, of whom the expert may well declare that they are insane, than it is for the normal. Subrational individuals with the cunning of the insane will take advantage of our leniency if present conditions are allowed to continue and we shall have a riot of crime by personal violence.

Journal Arkansas Medical Society, Little Rock

July

114 Tuberculosis as a House Infection. D. S. Warren, U. S. Public Health and Marine-Hospital Service.
115 *Research Work in Syphilology. L. R. Ellis, Hot Springs.
116 Pathology of Mitral Lesions. O. K. Judd, Little Rock.
117 *Duty to the Layman in Preventive Medicine. H. H. Niehuss, Wesson.
118 *Progress of Surgery. A. E. Sweatland, Little Rock.
119 *Responsibility of Surgeon in Gynecologic Conditions. C. S. Pettus, El Dorado.
120 Syphilis. G. M. D. Cantrell, Little Rock.
121 The Paucity of Attendance at Medical Societies. T. W. Hurley, Bentonville.

115, 117, 118, 119. Abstracted in The Journal, June 19, 1909, p. 2018.

Journal of the Medical Society of New Jersey, Orange

August

122 *Problems Confronting the Component Societies. D. Strock, Camden.
123 *Influence of Sleep on Arteriosclerosis. W. W. Beveridge, Asbury Park.
124 *Chloroform the Anesthetic in Throat Operations. F. F. C. Demarest, Passaic.
125 Historical Review of the Progress of the Practice of Medicine from 1865 to 1909. B. A. Waddington, Salem.
126 Cystic Carcinoma of a Supernumerary Ovary. F. H. Glazebrook, Morristown.
127 *Appendicitis. F. N. Donohue, New Brunswick.
128 Imperforate Anus. F. C. Henry, Perth Amboy.

122. Abstracted in The Journal, Aug. 7, 1909, p. 477.

123. Published in the *Virginia Medical Semi-Monthly*, July 23, 1909, and abstracted in The Journal, July 31, 1909, p. 401.

124. Abstracted in The Journal, July 31, 1909, p. 401.

127. **Appendicitis.**—Donohue's patient was taken ill with severe abdominal pain, not localized in any particular spot; temperature was 102 F., and there was some pulse disturbance. This pain continued for two or three days and disappeared. Two weeks afterward the man was taken ill with the same kind of pain in the same locality, attended with fever, lasting a little longer time and finally disappeared. About two weeks subsequently he was taken ill again with pains in the lower abdomen and had some bladder symptoms —frequency and difficulty in urination. He complained of pain in the lower abdomen; difficulty in urinating; no vomiting or constipation, temperature in morning was 102 F.; in evening, 103 F.; pulse was 110 in morning and 120 in evening. On examination a lump about the size of a cocoanut was found in the hypogastric region, extending over to the left side of the umbilicus; it was fluctuating and tender to the touch. A diagnosis of postperitoneal abscess was made and operation advised. An incision was made on the left side, the same that is made for ligation of the external iliac artery, and when the peritoneum was reached to push this aside and open the abscess extraperitoneally. A free incision was made and when the peritoneum was reached it was pushed aside and the lump was carefully examined. It fluctuated and was felt to pass over near the appendical region. By bimanual palpation it was pretty definitely made out that it was of appendiceal origin. The incision was closed, sealed with collodion and dressed. A second incision was made over the appendical site, but a little more internal and the peritoneal cavity opened. The appendix was found in an abscess cavity behind the bladder, perforated at the tip and diseased all the way up to its junction with the cecum. It was removed and the cavity was washed out and drained with a dressed tube. The patient made a smooth recovery.

Journal South Carolina Medical Association, Florence

July

129 Sources and Modes of Infection in Tuberculosis. M. P. Ravenel, Madison, Wis.
130 Sanitation in Small Towns. W. Egleston, Hartsville.
131 Treatment of Ophthalmia Neonatorum. J. W. Jervey, Greenville.
132 Mucous Colitis. A. G. Eaddy, Timmonsville.
133 Operations for Complete Removal of the Mammary Gland for Malignant Growths. R. S. Cathcart, Charleston.

Annals of Ophthalmology, St. Louis

July

134 Ocular Therapy of the Ancient Egyptians. O. Wilkinson, Washington, D. C.
135 William Charles Wells, American Pioneer in Ophthalmology. N. B. Jenkins, New York.
136 Chorioidal Hemorrhage Following Operations on the Globe. W. C. Posey, Philadelphia.
137 Optic Atrophy in Syringomyelia; Congenital Cataract with Unusual Atrophy of the Iris from Secondary Glaucoma. E. A. Shumway, Philadelphia.
138 Hole at the Macula. W. Zentmayer, Philadelphia.
139 Visual Acuity Under Definite Conditions is an Index of the Strength of the Necessary Spheric Lens (Plus or Minus) Which Will Give a Vision of 6/6 or More. J. Thorington, Philadelphia.
140 Chart for the Axis of Astigmatic Glasses. J. H. Claiborne, New York.
141 Case of Avulsio Bulbi. C. Williams, Philadelphia.
142 Hereditary Blindness and its Prevention. C. Loeb, St. Louis.

Alabama Medical Journal, Birmingham

July

143 Blood Transfusion. J. D. S. Davis, Birmingham.
144 The Psychic Department and Frequent Lines of Practice. J. T. Searcy, Tuscaloosa.
145 Perforating Wounds of the Intestine, from Gunshot and Stab. J. W. Watts, Birmingham.
146 Subclavian Aneurism: Report of Successful Ligation in First Surgical Division. E. M. Prince, Birmingham.
147 The Physician's Duty. W. W. Harper, Selma.
148 Wassermann Reaction for the Sero-Diagnosis of Syphilis: Report of Four Cases. J. P. Long, Birmingham.
149 Medicine and Sociology—Their Relation in the Past and Present. W. D. Partlow, Tuscaloosa.
150 Pathologic Action and Therapeutic Application of the Infundibular Portion of the Pituitary Gland. R. A. Bate, Louisville, Ky.

Chicago Medical Recorder

July

151 Development of Medical Science During the Last Few Decades. A. D. Kohn, Chicago.
152 Sociologic Aspect of Medical Charities. A. Hamilton, Chicago.

153 *Prolonged and Tedious Labors and Forceps Deliveries Compared as Causes of Epilepsy, Idiocy and Cerebral Diplegias. J. W. Putnam, Buffalo.
154 Asthmas and Their Treatments. G. F. Butler, Chicago.
155 Seborrheic Dermatitis. A. J. Croft, Chicago.

153. Published in *The Buffalo Medical Journal*, February, 1909, and abstracted in THE JOURNAL, March 13, 1909, p. 923.

Illinois Medical Journal, Springfield

July

156 *Gallstone Disease. J. B. Deaver, Philadelphia.
157 The Doctor in Civic Life. J. A. Witherspoon, Nashville, Tenn.
158 Some Surgical Diseases of the Stomach and Duodenum and Operative Treatment. J. A. Day, Jacksonville, Ill.
159 Rupture of the Uterus During Labor; Operation; Recovery. E. L. Moorehead, Chicago.
160 *Brain Surgery. C. Wagner, Chicago.
161 Foreign Bodies in the Intestines. H. Scott, Chicago.

156. Abstracted in THE JOURNAL, June 12, 1909, p. 1953.

160. Wagner.—Published in *Chicago Medical Recorder*, June, 1909.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 7

1 *Progress in Obstetrics. Sir J. W. Byers.
2 *[illegible] W. N. Haultain.
3 [illegible] ice, and Neck. A. Keith.
4 * [illegible]
5 * [illegible] ssociated with Cervical [illegible]
6 *Rare Variety of Femoral Hernia. E. C. Bevers.
7 *Method of Temporarily Removing Color Blindness. G. A. Stephens.

1. **Progress in Obstetrics.**—That the ideal to be aimed at in obstetric practice is not merely a living mother and a living child, but rather a living healthy mother and a living healthy child, is the keynote of Byers' paper. He cites statistics to show the present condition of obstetric medicine as practiced in two Irish maternities—the Rotunda Hospital in Dublin, the largest midwifery institution in the British Empire, and in the Maternity Hospital, Belfast. From Nov. 1, 1907, to Oct. 31, 1908, 2,060 patients were confined in the Rotunda Hospital with only 7 deaths, and in only 126 was the temperature over 100.4 F.—that is, a percentage morbidity of 6.12. Of the 7 deaths, only 3 were due to infection. One patient was admitted infected, another had been examined outside, and the third was a case of incomplete abortion with a fetid discharge on entering the hospital. In the Maternity Hospital, Belfast, there occurred during 1907 and 1908, 12 deaths out of 1,355 deliveries, and of these only 4 deaths were due to puerperal infection. (In one case the patient had been in labor for twenty-four hours attended by an unqualified midwife before admission; another woman, with a contracted pelvis, had been in labor several days before admission; and in a third case the child was born in an advanced state of decomposition.) Further, in 1908, the cases of morbidity from every cause estimated on the standard that the occurrence of one temperature of 100.4 F. indicated a pathologic condition, were 9.42 per cent., which is distinctly lower than at Hofmeier's well-known clinic. Again, owing to the aseptic and antiseptic management of the mother during her confinement, as well as by the adoption of special prophylaxis in the care of the child, cases of ophthalmia neonatorum in both maternities are now extremely rare. Such splendid results have been brought about by recognizing that, in at least 75 per cent. of the cases, labor is a natural process not needing interference, and that its tendency is to prevent infection, and that our duty is to follow and aid it, and to interfere only when the resources of Nature fail to protect the interests of mother or child. The uncalled for use of the forceps, early rupture of the membranes, douching—unless under very special circumstances—and the improper management of the third stage of labor are things of the past in properly conducted maternities. By the thorough application of the most minute surgical cleanliness as regards patient, nurse, and doctor during labor and the puerperium; by the adoption of Credé's teaching, that internal examination of parturient women should be altogether avoided or restricted within the narrowest possible limits (it can be well replaced by external examination) and by the immediate suture of any laceration occurring during the process of labor, these excellent results are possible of attainment.

2. **Rational Puerperium.**—The mode of management adopted by Haultain is as follows: The puerpera, if willing, is encouraged to sit up in bed to meals on the second day. As early as she feels inclined thereafter she is allowed to leave her bed and sit up for an hour. On the following day this is repeated morning and evening. The next day two hours, morning and evening, are spent out of bed, the patient sitting and walking a little, if she so desires. The fifth day after rising is practically spent out of bed, with the exception of a few hours rest in the afternoon, and on the tenth day the patient leaves the hospital. The number of patients who followed this line of treatment was 100. All the patients sat up in bed on the second day; 40 rose on the third day; 35 rose on the fourth day; 25 rose on the fifth day. Of the 100 cases, 47 were primiparæ and 53 multiparæ. Each was carefully examined before leaving the hospital, and as many as possible six weeks later. The morbidity in these cases—that is, a temperature over 100 F. or pulse over 90 for twelve consecutive hours—was represented by three cases. Two patients developed infective temperature on the third day. One of these left the hospital well on the sixteenth, the other on the twenty-eighth day. Pelvic examination on the day of leaving hospital (tenth to twelfth day) showed the pelvic organs to be normal, except in two cases, where a slight retroversion of the uterus was present. In one case there was considerable varicosity of the veins of the legs, but the woman remarked that it was not nearly so bad as after previous confinements—this being her seventh. All the women examined six weeks and more after confinement showed involution to be thorough, and the position of the uterus normal, with the exception of two, being those previously noted as having retroversion. Many women voluntarily expressed the opinion that they had never felt so well previously, and from the others when asked, there was no dissentient voice.

4. **Head-Nodding in Infants.**—The two cases reported by Gibson had many things in common, confirming the theory advanced by Raudnitz and J. Thomson, who contended that it is due to the dim light in which these babies are living and try to use their eyes, and this theory fits these two subjects well; the seasonal incidence, in the darkest months of the year; the environment—both these babies living during the day in dark, ground-floor rooms, with one window, facing the east, but shut out from most of the sky by tall buildings within a few yards, and neither baby was often in the open air. So far as could be learned the two had never been in contact, but their homes were less than fifty yards apart. The babies recovered under hygienic and dietetic treatment. Both cases ran a course of between five or six weeks.

5. **Clonic Spasm of Diaphragm.**—There would appear to be two ways in which a cervical rib might cause diaphragmatic spasm: (1) by pressure on the vagus in the neck, causing a reflex contraction, much as derangement of the stomach may produce the ordinary hiccough by irritation of the terminations of the vagus in the gastric mucosa; or (2) by so exalting the normal impulse regularly passing down the phrenic nerve to produce the usual inspiratory contraction of the diaphragm by direct irritative pressure on that nerve trunk so as to produce a violent spasmodic contraction of the muscle. The latter appears to Hunt to be far the more probable explanation. In his case the vagus in the carotid sheath lay some distance internal to the cervical rib, whereas the phrenic nerve in its course along the anterior surface of the scalenus anticus muscle must be exposed to pressure of a large cervical rib near the articulation with the scalene tubercle of the first rib. The fact that removal of the rib, alone of the treatments tried, was directly followed by cessation of the spasm, is, he thinks, another argument that the spasm was probably caused by pressure of the rib.

6. **Femoral Hernia.**—Bevers' patient, a woman of 58, had undergone an operation for femoral hernia in the right side three years previously. For six days there had been abdominal pains and vomiting, the symptoms commencing suddenly

while she was at work in her garden; for two days there had been constipation which was not quite complete, as flatus had been passed, and repeated enemata had produced a slight result. When seen, the pulse was 112, temperature normal, the abdomen was distended, and there was some general tenderness. Just below and parallel with Poupart's ligament on the right side there was an old scar, and at the outer extremity of this scar external to the femoral vessel a little thickening could be felt; this small thickening was not tender and the patient declared it had been present ever since the previous operation; there was no swelling in the situation of the femoral canal. Owing to the fatness of the patient, the presence of the old scar and the unusual situation of the slight swelling present, Bevers found it difficult to decide whether the patient was suffering from a hernia strangulated in an abnormal situation, or from some other form of intestinal obstruction. He therefore opened the abdomen in the middle line below the umbilicus; distended small intestine at once presented, and a little examination proved that there was a Richter's hernia into a small hernial opening just external to the femoral artery.

7. **Temporary Removal of Color-Blindness.**—Going on the theory that anything that would improve the movements of the cells ought to have the effect of stimulating the retinal cells to more ready response to color sensations, and as the calcium salts have that stimulating effect on the body cells, Stephens came to the conclusion that a big dose of calcium lactate ought to remove color blindness, if only temporarily. The first patient to undergo the experiment was a medical man whose response to green sensations was *nil*, but who, after only 10 grains of calcium lactate was able to appreciate and differentiate green-colored articles. In the next case, Stephens gave 10 grains of the drug at 2 o'clock, and another 10 grs. at 3. At 4 o'clock he found that response to all the colors was distinctly better. The only objection to the experiment was that the patient had a headache for a few hours afterward. In the third case he gave only 20 grains, but the result was just as satisfactory and quite as conclusive.

Lancet, London

August 7

8 *Progress in Obstetrics. J. W. Byers.
9 *Malformations of the Heart. A. Keith.
10 *Method of Giving Ether by Means of Nasal Tubes. H. M. Page.
11 Pressor Bases in Normal Urine and their Diminished Excretion in Gouty Urine; the Excretion of Chlorids in Gout. W. Bain.
12 Relative Toxicity of Chloroform and of Carbon Tetrachlorid. A. D. Waller.
13 Medical Relief and Public Assistance. C. S. Loch.
14 Ameliorative Measures Indicated by School Medical Inspection. J. R. Kaye.

8. See Abstract No. 1.

9. **Malformations of the Heart.**—The malformations discussed by Keith are the following: (1) Subdivision of the right ventricle; (2) cases in which the developmental expansion of the infundibulum is arrested; (3) hearts in which there is almost complete arrest in the developmental expansion of the infundibulum; (4) cases in which the stenosis is merely due to fusion of the semilunar valves; (5) cases in which the infundibulum is present and the body of the right ventricle is small or absent; (6) cases of subaortic stenosis; (7) cases of congenital aortic stenosis.

10. **Ether by Means of Nasal Tube.**—Page employs the method which he says was devised by Crile.

Medical Press and Circular, London

July 21

15 Infantile Scurvy. T. D. Lister.
16 Symphysiotomy and Hebosteotomy. R. E. Runge.
17 Influence of Alcohol on Immunity. T. Laitinen.
18 Extraction of Cataract in the Lenticular Capsule. W. E. McKechnie.
19 *Treatment of Morphinism. W. O. Jennings.
20 Acromegaly. J. C. McWalter.

July 28

21 Acute Tuberculous Rheumatism. A. Poncet, and M. Leriche.
22 A British Medical Reminiscence. H. M. Jones.
23 Immunity. E. Metchnikoff.
24 Certain Aspects of Medical Journalism. D. Walsh.

August 4

25 Heredosyphilis. D'A. Power.
26 Immunity (concluded). E. Metchnikoff.
27 The Dietetic Dechloridation Cure in Bright's Disease. F. Widal.
28 Progressive Medicine and the Outlook on Tuberculosis. R. W. Philip.

19. **Treatment of Morphinism.**—For many years Jennings has been using heart tonics and bicarbonate of soda in morphinism, not as a "cure," but as a part of the treatment which remedies the physiologic disturbances, caused by suppression, and which, by alleviating two of the principal factors of craving, reduces the otherwise intolerable wretchedness of an ordinary weaning to a perfectly bearable minimum. In morphin addicts, morphin and spartein, as well as digitalis are tonics of the heart. Spartein acts in morphin suppression, like morphin, as a perfect and immediate heart tonic, and physiologists and patients affirm that spartein enables these patients to walk up hills or to take active exercise which would otherwise have been impossible. The use of Vichy water is in Jennings' opinion the most valuable symptomatic treatment of the gastric and general hyperacidity of suppression.

The morphin habit is a toxic neurasthenia, a disease of overstimulation, and outside the special indications for cardiac tonics, for a flagging heart deprived of its accustomed stimulation, nearly all of the other somatic symptoms may be looked on as nervo-katabolic. They react on one another as the *ensemble* of the somatic disturbances of function react on psychism. The result of overstimulation is to produce metabolic perversion and to cause fatigue, and the fatigue of the nervous centers in its turn causes katabolic insufficiency, the formation of acids, which keep up a condition of nervous exhaustion by chemical changes of the cells. In ordinary healthy tiredness the acids (phosphoric, lactic, carbonic) are soon eliminated, but when fatigue becomes more or less permanent, as in the toxic asthenia of morphinism, the nuclei of the neurones, which in their normal condition are alkaline, become acid, and this can be shown histologically.

There are many intermediary products of imperfect combustion which can be found in the urine, the more perfect oxidation of which, together with the relief of the discomfort caused by them, can be promoted by bicarbonate of soda. Although Vichy water is not *per se* a "cure" for morphinism, it is a factor in treatment conditioning the efficacy of the *ensemble* of the measures employed. Its administration will make all the difference in the addict's comfort during weaning, and its omission may turn the scale to failure instead of to success. In some exceptional cases, those patients who are determined to give up the use of morphin, if they can obtain sufficient relief, have sometimes found that Vichy water was all that was necessary to diminish the general discomfort to a degree compatible with renunciation.

Journal of Laryngology, Rhinology and Otology, London

August

29 Congenital Syphilitic Disease of the Ear. J. S. Fraser.
30 Employment of Hot Air in Otology. C. Ferran.
31 Functional Examination of the Labyrinth. E. J. Moure and P. Cauzard.

Indian Medical Gazette, Calcutta

June

32 The Serodiagnosis of Syphilis. W. D. Sutherland.
33 *Pneumonia: Its Treatment by Iron. F. S. C. Thompson.
34 *Suggestion for Treatment of Gonorrhea. C. Duer.
35 Report of the Medical College Hospital, Calcutta, for 1908. C. P. Lukis.

July

36 [illegible] Ameba. H. Werner.
37 [illegible] C. Dykes.
38 [illegible] Capsule (Smith's Operation) by Division of the Suspensory Ligament. V. B. Nesfield.
39 Alypin with Special Reference to its Hitherto Undescribed Cycloplegic Action. W. E. S. Moncrieff.
40 A Burman Bored Well. W. G. King.
41 Report of the Medical Hospital, Calcutta, for 1908 (continued). C. P. Lukis.
42 Sarcoma of the Lower Lip. O. Langston.
43 Sarcoma of the Femur. O. St. Moses.
44 An Atypical Case of Rabies in a Dog. G. Browse.

33. **Pneumonia Treatment by Iron.**—The exact treatment carried out by Thompson consisted in giving the following prescription:

℞.	gm. or c.c.		
Liquoris ferri chloridi	1	or	m. xv
Liquoris ammonii acetatis	4		ʒj
Aquæ chloroformi, ad	30		℥j

Sig.: Every 4 hours.

No other drugs or stimulants are administered, with the exception of a purgative to open the bowels freely at the commencement of the disease. But a careful watch is kept on the heart, and if this shows signs of collapse, as indicated by a weak and quickened pulse, then cardiac stimulants are called in to aid the failing circulation: the pulse is not relied on alone, because it may be full and not much quickened just before death. When necessary, the following prescription is ordered:

℞.	gm. or c.c.			
Liquoris strychninæ		33	or	m. v
Tincturæ digitalis		46		m. vii
Aquæ chloroformi, ad	30			ʒi

This is given alternately with the iron mixture every six hours, i. e., four doses of each in 24 hours. The number of patients treated with iron alone was six; the remaining four needed the addition of the strychnin mixture; no patient received anything but iron before the fifth day. Besides these medicines, general principles were followed in the management of the cases.

34. **Treatment of Gonorrhea.**—Duer suggests to those in charge of military and large hospitals a trial of Bier's treatment, especially in recent cases in which the inflammation is confined to the anterior part of the urethra. An elastic band about 1 in. broad is applied to the penis 2 inches or so above the meatus, continuously, or intermittently, several hours on and several hours off. Rest in bed during the treatment might or might not be necessary. The tightness of the band would have to be carefully regulated so as, while hindering the venous return, not to stop the arterial supply. Frequent washing away of the discharge by some mild antiseptic would be desirable. In addition, irrigation of the urethra beyond the band might be advisable.

Annales de Médecine et Chirurgie Infantiles, Paris

July 15, XIII, No. 14, pp. 469-504

45 *Strangulated Hernia in Infant. (Hernie étranglée chez un nourrisson.) R. de Gaulejac.
46 *Pulmonary Tuberculosis with Cavities in Children. E. Gaujoux and Brunel (continued).

45. **Strangulated Hernia in Infant.**—The strangulation had occurred fifteen days before the child was brought to the clinic; the hernia had been noticed since birth. This long survival could have been possible only with much less toxicity on the part of the intestinal contents than is the case in adults and only with a hernia far along in the digestive tract. An artificial anus would probably have developed spontaneously in the strangulated loop in another day or so. The infant organism has evidently means of adapting itself to functional or mechanical disturbances beyond those possessed by adults. The case encourages, says de Gaulejac, surgical interference even in the most apparently desperate cases in young children.

46. **Pulmonary Tuberculosis with Cavities in Children.**—This article is based on fifty cases, including a number personally observed. Chronic tuberculosis of the lungs is rare in children, but when it does occur the same process of defense is observed as in adults.

Lyon Médical, Lyons

XLI, No. 19, pp. 961-996

47 Usefulness of Aluminum Filters in Radiotherapy. H. Bordier.

No. 20, pp. 997-1036

48 *Hemorrhagic Pancreatitis with Diffuse Peritoneal Fat Necrosis. X. Delore and H. Alamartine.

No. 21, pp. 1037-1092

49 Kidney Complications during Pneumonia. F. Moulsset and J. Challer.

No. 22, pp. 1093-1148.

50 Orbital Puncture. New Mode of Entering the Subarachnoid Space. (Ponction orbitaire.) L. Bériel.

Revue de Chirurgie, Paris

July, XXIX, No. 7, pp. 1-251

51 *Experimental Transplantation of Joints. (La greffe des articulations.) H. Judet.
52 *Esophagoscopic and Clinical Study of Tuberculosis of the Esophagus. Guisez and Abrand.
53 Gunshot Wound of the Cerebral Peduncle. (Lésion pédonculaire par balle de revolver.) G. Guillain and G. Houzel.
54 *Plastic Operation on Ulcerated Ileum to Prevent Impending Perforation. (L'entérocléisis épiploïque dans les processus ulcératifs aigus de la dernière anse de l'iléon.) S. Solieri.
55 Sprained Knee. (Entorse du genou par abduction et rotation externe.) M. Gangolphe and C. Thévenet.
56 Dislocations of the Metatarsus. (Luxations du métatarse du diastasis entre le 1er et le 2e métatarsien.) E. Quénu and G. Küss. Commenced in No. 1.
57 Abscesses in the Liver and Expectoration of Bile. (Abcès du foie et expectoration biliaire.) A. Valence.

51. **Grafting of Joints.**—Judet describes experimental arthroplasty on dogs, rabbits and cats, the results showing that the joint, as a whole, with its synovial sheath, has a vital autonomy which permits its being grafted into another animal and retaining its vitality. The transplanted cartilage is the only one of the tissues that alters; it requires the action of synovial fluid. In man the transplantation of a joint would be a much simpler procedure on account of the size of the parts. The article is illustrated with the technic worked out on the cadaver. The great difficulty will be to obtain suitable grafting material.

52. **Tuberculosis of the Esophagus.**—Guisez and Abrand have encountered two cases and review one reported by Schrötter giving an illustrated description of the anatomic findings. If the stenosis is of a sclerocicatricial type, dilatation is possible, proceeding very cautiously. In case of ulceration, the indications are the same as for fissure in a sphincter—gentle dilatation to act on the spasm. Local treatment can be by lactic acid or silver nitrate, as for laryngeal tuberculosis, with general measures. The development of esophagoscopy has permitted the differentiation of this form of tuberculosis.

54. **Omentum Shield for Acute Ulceration in the Ileum.**—Solieri was convinced that perforation was imminent in a case of paratyphoid infection. Appendicitis had been diagnosed as the agglutination test for typhoid had been negative. The operation revealed the absence of an acute process in the appendix, but an ulceration was found in the small intestine. He drew up the omentum over the part of the intestine involved and fastened it like a thick muff all around the diseased loop, suturing the omentum to the mesentery in front, above and below and to the intestine on each side of the affected zone. The patient recovered without mishap except for three severe intestinal hemorrhages.

Revue de Gynécologie, Paris

XIII, No. 3, pp. 371-560. Last indexed July 24, p. 329

58 *Torsion of Subserous and Interstitial Uterine Fibromas. G. Piquand and J. Lemeland.
59 *Obliteration of Douglas Pouch in Treatment of Certain Cases of Uterine Prolapse. G. Marion.
60 *Gastrocutaneous Fistulas Due to Gastric Ulcer. H. M. Jeannel.

58. **Torsion of Uterine Fibromas.**—Torsion was observed by the writers in 23 of 9,000 cases of uterine fibroma. In 55 cases on record in which the puerperal past is mentioned, 12 cases were in virgins and only 36 in women who had borne children. Eight unpublished cases are reported in detail, with fifteen illustrations.

59. **Obliteration of Douglas Pouch in Treatment of Uterine Prolapse.**—The unusually large Douglas pouch in the case reported kept up the prolapse, which was corrected at once by obliterating the cul-de-sac. This was done by running a thread through its walls and drawing it up, repeating this at four points. With forceps a lengthwise fold in the peritoneum was taken up and the needle passed through the fold, and continuing, through six of these folds, to make each one of the four sutures.

60. **External Fistulas Into the Stomach.**—Jeannel presents a second article on this subject, giving the details of 50 cases found in the literature. About 35 operations were performed on 26 of the patients, with a complete cure in 76 per cent. and a fatal outcome in 16 per cent.

Revue de Médecine, Paris

July, XXIX, No. 7, pp. 505-584

61 Morphologic Varieties of Cirrhosis. E. Géraudel.
62 General Plan of the Sympathetic Nervous System. L. Lavastine. Commenced in No. 5.
63 Communication between the Auricles. (Communications inter-
de vue anatomopathologique, physiolo-
. Lyon-Caen.
64 * Fever. G. Reynaud

64. **Hemoglobinuric Fever.**—Reynaud has found infusion of 250 c.c. of 7 per thousand salt solution two or three times a day effectual in treatment of hemoglobinuric fever, and Gouzien has reported similar success in 53 cases with no mortality. Reynaud summarizes 7 cases from his experience as the pioneer in this line of treatment. The saline infusion must be supplemented by quinin and the patient must be closely supervised all the time.

Archiv für klinische Chirurgie, Berlin

LXXXIX, No. 4, pp. 855-1136. Last indexed Aug. 7, p. 491

65 Post-Traumatic Ossifications. A. Pfister.
66 Defects in Development of the Mesentery and Abnormal Positions of the Intestines, especially of the Large Intestine. (Entwickelungshemmung des Mesenteriums und abnorme Lageverhältnisse des Darms.) E. Sauerbeck.
67 *Transplantation of Thyroid. (Zur Frage der Schilddrüsentransplantation.) H. Salzer.
68 Separation of Epiphysis from Neck of Femur. (Epiphysenlösung des Schenkelhalses und ihre Folgen.) O. Fittig.
69 Surgical Treatment of Generalized Peritonitis. O. Nordmann.
70 *General Anethesia during 1908. (Ueber Inhalationsnarkose.) G. Neuber.
71 *Expulsion of Blood from Lower Part of Body. (Die künstliche Blutleere der unteren Körperhälfte.) Momburg.
72 Congenital Inguinal Hernia. Ueber angeborene Leistenbruchssäcke.) Hansen.
73 Nail Extension for Fractures. (Gegenwärtiger Stand der Nagelextension.) F. Steinmann.
74 Operative Treatment of Subcutaneous, Acute Traumatic, Complete Paralysis of the Lower Roots of the Cervical Plexus. Bardenheuer.
75 Multiplicity of the Renal Arteries and its Surgical Importance. (Multiplicität der Nierenarterie.) J. B. Seldowitsch.
76 Posterior Arthrotomy for Irreducible Dislocation of the Shoulder. (Reposition der irreponiblen Schulterluxation mittelst Arthrotomie von hinten.) Madelung.

67. **Transplantation of the Thyroid.**—Salzer implanted the thyroid in the abdominal wall, making a pocket between the fascia and peritoneum or in the muscle, and in this pocket transplanting part of the animal's own thyroid. Of 60 rabbits thus operated on, 23 died, but the results in the remaining 37 show that the organ heals in place and functionates better in thyroidectomized than in normal animals, and that the transplanted gland is able to produce colloid substance and that its vascularization is fully as good as when in its normal place. As only a small portion can be thus transplanted at a time, it is wise to have the technic as simple as possible. It can not be expected that one small piece can supply the total thyroid needs of the organism.

70. **Anesthesia in Germany in 1908.**—Neuber received 112 responses to question blanks sent out to surgeons requesting particulars in regard to their anesthesias during 1908. Chloroform, it seems, was used in 20,613 cases with 1 death to 2,060; ether in 11,859, with 1 death to 5,930; chloroform plus ether in 10,232, with 1 death in 3,410; and the scopolamin-morphin mixed anesthesia in 23,809 cases, with 1 death in 4,762. Local anesthesia or the first whiffs of ether were utilized in fully a quarter of all cases that would have required general anesthesia twenty years ago and no fatality was reported with these methods. In Gurlt's statistics, 1890-1897, there was 1 death in 2,075 chloroform and 1 in 5,112 ether anesthesias, chloroform having been used five times as often as ether, while in Neuber's statistics the scopolamin-morphin mixed technic takes the lead in numbers, and also from the standpoint of prevention of postoperative pneumonia. Kümmell reports only 0.61 postoperative pneumonias in 1908 in contrast to 2.5 per cent. formerly, von Eiselsberg only 0.9 per cent. to 3.3 per cent. formerly, and Neuber himself has had no cases.

71. **Expulsion of the Blood from the Lower Part of the Body.**—Momburg here reviews the thirty-four cases on record in which operations have been performed after expelling the blood from the lower part of the body by a belt applied like a tourniquet to the waist. The belt was left in place for two hours and twenty minutes in one case, but no deleterious results were observed in any instance or discovered at autopsy in the six cases in which the patients succumbed to an intercurrent affection about three months later or to the progress of the primary trouble. He insists that his technic should be closely followed, using a rubber tube about the size of a finger and four or five feet long, stretched around the body just below the costal arch; the pulse in the femoral artery should be tested at each turn of the belt. Just as this pulse disappears the ends of the tube are tied together and the ends held with a clamp. A tourniquet is then applied to both thighs and below the knees, so that by loosening these various tourniquets in turn the circulation through the lower part of the body is restored by degrees. It is even better to commence by expelling the blood from the limb by winding it upward from the toes. Then, after the belt has been applied, the bandage on the leg is removed and the leg placed lower than the pelvis, thus allowing any blood still in the pelvis to flow down into this leg, leaving this side of the pelvis practically exsanguinated.

Berliner klinische Wochenschrift

July 19, XLVI, No. 29, pp. 1341-1388

77 Tumor in Frontal Lobe of Brain. (Zur Klinik der Stirnhirntumoren.) M. Bernhardt and M. Borchardt.
78 Puncture of the Brain. (Hirnpunktion.) Id.
79 Diagnosis of Syphiloma in the Brain. (Zur Diagnose der Hirnsyphilome.) Frotscher and Becker.
80 The Increased Blood Pressure in Nephritis. (Zur Theorie der nephritischen Blutdrucksteigerung.) G. Marcuse.
81 Comparison of Diastolic Blood Pressure as Determined by Various Methods. (Was lehrt uns der Vergleich der mit verschiedenen Methoden gewonnenen diastolischen Blutdruckwerte?) B. Zabel.
82 Seroreaction in Syphilis in Relation to Antitryptic Power. (Die [illegible] hungen zur antitryptischen Kraft [illegible] A. Fuerstenberg and J. Trebing.
83 *Constipation Resulting from Excessive Absorption of Fluids in Feces. (Eine neue Grundlage zur Beurteilung und Behandlung der chronischen Obstipation.) Lipowski.
84 Opsonic Vaccine Treatment. (Vaccinetherapie.) Reiter.

July 26, No. 30, pp. 1389-1436

85 *Treatment of Acute Infectious Processes with Retention of Function. C. Ritter.
86 Co[illegible] t. (Wesen der sogenannten "Psy[illegible] A. Zaloziecki.
87 In [illegible] suistik des induzierten Irreseins.) R. Sartorius.
88 Action of Neutral Red Salve on Experimental Vaccine Infection. (Wirkung einer Neutralrotsalbe auf die experimentelle Vaccineinfektion beim Kaninchen.) E. Friedberger and J. Yamamoto.
89 *Staining Living Human Eye for Diagnostic Purposes. (Ueber das Färben lebender menschlicher Augen zu physiologischen und zu diagnostischen Zwecken.) C. Hamburger.
90 *Quantitative Tests for Pancreas Functioning. O. J. Wynhausen.
91 Bacteriology of the Stomach. (Zur Bakteriologie des Magens.) M. Hirschberg and H. Liefmann.

83. **Excessive Intestinal Absorption as Cause of Constipation.**—Lipowski found that normal persons absorbed and retained from 30 to 90 c.c. of 200 c.c. of tepid salt solution gently injected into the rectum and allowed to remain for fifteen minutes, while persons inclined to chronic constipation invariably retained from 150 to 180 c.c. He calls this proportion between the amount injected and the amount absorbed the "resorption coefficient." In Fleiner's method of treating constipation by injection of oil, the main factor in the result is that the oil interferes with absorption in the intestines, and thus the feces remain of softer consistency. On account of the various disadvantages of oil, which Lipowski enumerates, he uses paraffin for this purpose, injecting it into the rectum where it spreads out in a thin layer over the mucosa, effectually preventing absorption. He asserts that it is entirely non-irritating, does not decompose, and can remain in the intestine over night, thus dispensing with the reclining necessary after taking the "oil cure" during the day. The paraffin does not generate flatus, while the laxative effect is prompter than with the oil. He has applied this treatment of constipation in 53 patients; the paraffin was injected in the morning in 46 cases and at night in the others. In every case spontaneous defecation followed after a few days, and then the intervals between the injections were lengthened and the amount reduced. He uses paraffin with a melting point of 38 C. (101 F.), mixing some with a melting point at 78 C. (173 F.), with liquid paraffin in the proportion of 1/8. This mixture is warmed until the whole is fluid, and about 200 c.c. (nearly 7 ounces) are injected through a soft bowel tube, 20 cm. (8 inches) long, the syringe being also warmed. Instead of classifying constipation as merely spastic, atonic or fragmented, he insists that the absorbing capacity of the terminal bowel must always be taken into account.

85. **Treatment of Infectious Processes with Retention of Function.**—Ritter pays tribute to Bier as having revolutionized the treatment of acute infectious processes to prevent destruc-

tion of tissue and deformity. Bier's hyperemic treatment and the more recent ferment treatment ensure healing with retention of function, a result which has assumed greater importance since the introduction of industrial insurance. Ritter then announces that the same results may be obtained by much simpler means, and reports a number of cases to sustain this assertion. All that is necessary is to keep puncturing the process while maintaining arterial hyperemia in the simplest way, which is by plunging the part into water as hot as the patient can bear it, for half an hour or an hour at a time, three times a day. He punctures every day, each time at a separate place, to avoid fistulas. The cavity fills up with serous fluid with very few pus corpuscles; the organism thus supplies its own "ferment." After the third day he punctures only on alternate days. By this means Ritter has seen suppurative processes in the neck, axilla and groin subside without leaving a trace. Encouraged with this success in eleven cases, he treated felons, suppurating affections of the knee joint, cerebrospinal meningitis, etc., all confirming the efficacy of repeated puncture as an efficient mode of treating acute suppurative processes without impairment of function. He is convinced that previous efforts to prevent reabsorption of infectious matters have been based on false premises, that the results with lowering the part, immobilization, bed rest, etc., have given good results only because they were none of them absolutely effectual in preventing absorption. Even the constricting band does not accomplish this, as the wave that follows its removal flushes out the part. It is safer to have the absorption proceed more gradually, and he thinks that a safe, simple and effectual technic has been found in the daily puncture and hot-water treatment.

89. **Stain for the Living Human Eye for Diagnostic and Other Purposes.**—Hamburger announces that he has been experimenting for nearly a year with internal administration of fluorescein which discolors the tissues as in jaundice without harm, as the effect soon disappears. In the dose of 1 gm. (15 grs.) per 25 pounds of body weight, the stain does not discolor the healthy human eye or at most not until after two or three hours, while if the eye is inflamed or diseased it is discolored almost at once. The effect is most striking when only one eye is affected. He explains this as owing to the peculiarly slow and quiet intraocular metabolism of the human eye in physiologic conditions, while all this is totally changed with the onset of inflammation. The inflammation must be true intraocular irritation to attract the stain; mere conjunctivitis does not cause the discoloration, nor the mere presence of a foreign body. The results are interesting for physiologic study of the eye and also for diagnosis of ocular inflammation.

90. **Quantitative Tests of the Pancreas.**—Wynhausen has found that it is possible to estimate the functioning of the pancreas by quantitative determination of the diastasic and tryptic ferments in the stool. He used the Wohlgemuth and Fuld technics and reports the details of several cases demonstrating the precision and reliability of this method of testing pancreas functioning.

Correspondenz-Blatt für Schweizer Aerzte, Basle

July 1, XXXIX, No. 13, pp. 433-472

92 *Suprarenal Treatment of Osteomalacia. S. Stocker, Jr.
93 *Pulverized Clay in Treatment of Diarrhea and Dysentery. (Zur Ehrenrettung der Bolus alba.) Frei.
94 *Eye Glasses and Astigmatism. (Brillen und Astigmatismus.) A. Dutoit.

July 15, No. 14, pp. 473-504

95 Diagnosis and Treatment of Glaucoma. O. Haab.
96 Obstetrics and the General Practitioner. A. Gœnner.

92. **Suprarenal Treatment of Osteomalacia.**—Stocker reports what he thinks is the first case of non-puerperal osteomalacia treated with adrenalin. Slight improvement was evident about the sixth injection, but it proved transient, and recurrence of severe symptoms compelled castration, which proved promptly successful. One ovary was found in cystic degeneration, the other was enlarged and adherent. He tabulates the details of twenty-two other cases of osteomalacia treated with adrenalin that have been reported, the results demonstrating that in each of the 14 cases in which improvement was observed, a turn for the better was evident after the first or second injection.

93. **Bolus Alba in Tropical Dysentery.**—Frei quotes with approval Sahli's remark that the old text-books ought to be saved, as they contain many things which we throw aside in our eagerness for the new, but which time may bring into favor again, and he cites bolus alba as an instance of this foolish discarding of an extremely useful remedy. He has found it rapidly effectual in treatment of diarrhea in adults and children. In a case of tropical dysentery which had resisted all kinds of treatment and dieting for months, in the hands of a number of eminent clinicians, and had reduced the young woman to a skeleton, a prompt change for the better was observed under bolus alba treatment, and complete cure soon followed and has persisted for nearly a year to date. He gave the bolus alba according to Stumpf's directions, suspended in water, 50 gm. in 200 c.c. water, and nothing was eaten for eighteen hours afterward, but the patient was allowed to drink freely and at the end of the eighteen hours to eat a light but abundant meal. Four hours later another dose was given and the patient fasted again for eighteen hours. This was kept up with smaller doses of the bolus two or three times a day with regular meals. The diarrhea was arrested by the third day of treatment and improvement in the general condition proceeded at a rapid pace, but the patient was advised to take 10 gm. of the bolus daily for another month, and was soon in good health, weighing 140 pounds.

94. **Eyeglasses and Astigmatism.**—Dutoit warns that no one except an expert ophthalmologist should prescribe glasses when there is any suspicion of astigmatism, but he asserts that special skill is not required to prescribe glasses for simple myopia, hypermetropia and presbyopia if care is taken to avoid overcorrection.

Deutsches Archiv für klinische Medizin, Leipsic

XCVI, Nos. 5-6, pp. 419-594. Last indexed July 24, p. 330

97 of Blood in Diabetes. nzentration bei Dia-
98 J. Sandelowsky. Id. E. Reiss.
99 Blood Pressure-raising Substance in the Kidney. (Blutdrucksteigernde Substanz der Niere.) A. Bingel and E. Strauss.
100 Etiology and Pathologic Anatomy of Rheumatic Myocarditis. E. Bracht and Wächter.
101 *Tympanites in Infectious Diseases, especially Pneumonia. (Auftreten eines toxischen Meteorismus bei Infektionskrankheiten, insbes. der Pneumonie.) G. Krönig and F. Klopstock.
102 Influence of Food and Fever on Elimination of Sugar and Acid in Diabetes. (Einfluss der Nahrung und des Fiebers auf die Zucker- und Säureausscheidung beim Diabetes mellitus.) A. Gigon and R. Massini.
103 Pure Congenital Dextrocardia. (Zur Kasuistik und Lehre von der angeborenen reinen Dextrokardie.) M. Nagel.
104 *Research on Experimental Lead Poisoning. (Untersuchungen bei experimenteller Bleivergiftung.) P. Schmidt.

101. **Tympanites in Infectious Diseases.**—The clinical and experimental evidence on hand seems to indicate, Krönig declares, that the tympanites observed in the course of an infectious disease is not the expression of a complicating intestinal disturbance, but merely the consequence of the general intoxication. The rapid subsidence of the meteorism after the crisis in pneumonia speaks in favor of a toxic influence on the central organ rather than of any special toxic action on the intestines or their innervation. Compare, for example, the slow and tedious subsidence of toxic affections of the myocardium or of a postdiphtheritic polyneuritis with the prompt recuperation of bowel functioning after the crisis in pneumonia. The rapid, superficial breathing in an infectious disease is favored by the upward displacement of the diaphragm; the reaction occurs differently in women, with their soft, yielding abdominal walls, than in men with powerfully developed abdominal muscles. In men even a slight development of gas has a tendency to push up the diaphragm to a dangerous extent. In any event, this toxic tympanites in infectious diseases is extremely important, requiring treatment as imperiously as beginning heart weakness. Treatment must aim to prevent development of intestinal gases and to expel those already formed. Besides dietetic measures to prevent formation of gases, and purgatives, enemas, and especially repeated introduction of a soft bowel tube, leaving it long in place, to promote the passage of flatus, the administration of strychnin is important as a means of re-enforcing the other measures to restore tone to the intestines. Physostigmin has not fulfilled

the anticipations roused by its action in tympanites of other origin. It has failed completely in a series of cases of this toxic meteorism, but its property of stimulating to spasmodic contraction when the bowel is relaxed under the influence of atropin encourages further trials of it. Experimental and clinical experience seem to conflict here.

104. **Experimental Lead Poisoning.**—Schmidt concludes from his research that the lead keeps up a constant wandering through the body until its final elimination, and that the leucocytes play the most important part in the defensive processes against it. Consequently, the organism is better protected against lead poisoning when there are large numbers of leucocytes. The conditions and indications in metal poisoning, therefore, approximate those in infectious diseases.

Deutsche medizinische Wochenschrift, Berlin

July 22, XXXV, No. 29, pp. 1257-1296

105 Etiology of Sleeping Sickness. (Weitere Untersuchungen über die Aetiologie der Schlafkrankheit.) Kleine.
106 Cultivation of the *Spirochæta pallida.* J. Schereschewsky. Id. Mühlens.
107 Intestinal Myomas. (Zur Kasuistik der Myome des Darmes.) R. Frotscher.
108 *Sudden Death, with Special Regard to Indications for Operative Treatment of Embolism of the Lung. (Ueber plötzliche Todesfälle mit besonderer Berücksichtigung der Indikationsstellung für die Trendelenburgsche Operation bei Lungenembolie.) M. Busch.
109 Subcutaneous Perforation of the Digestive Tract. (Zur Kenntnis der subkutanen Perforationen des Magendarmkanals.) Dege.
110 Plastic Operations on the Quadriceps. (Quadrizepsplastik.) F. Selberg.
111 Cause and Treatment of Pain in the Breast. (Ueber Mastodynie.) M. Samuel.
112 *Gastrosuccorrhea and Pyloric Stenosis in Infants. (Der "Magensaftfluss" in der Pathogenese und im Verlauf der Pylorusstenose der Säuglinge.) Engel.

July 29, No. 30, pp. 1297-1336

113 Staining Technic for Typhoid Bacilli. (Ein neues Verfahren zum Nachweise und zur Differentialdiagnose der Typhusbakterien mittels Malachitgrün-Safranin-Reinblau-Nährböden.) F. Loeffler, E. Walter, E. Dibbelt and J. Wehrlin.
114 Rachitic Coxa Valga. A. Stieda.
115 Operability of Gastric Cancer. (Operabilität der Magenkrebse.) H. Braun.
116 *Treatment of Cardiospasm. M. Makkas.
117 Vaccine Treatment of Multiple Abscesses in Infants. (Behandlung der multiplen Abszesse der Säuglinge mit spezifischem Vakzin.) Wechselmann and G. Michaelis.
118 Slab of Meat and Bone for Testing Roentgen Tubes. (Ein neuer Härtemesser.) P. Harrass.
119 Semimillennial of the Leipsic Medical Faculty. K. Sudhoff.

108. **Sudden Death and Indications for Operative Treatment of Pulmonary Embolism.**—Busch states that of the 878 fatalities among the 9,727 patients in Körte's surgical service at Berlin during the last four years, 22 of the deaths occurred suddenly and the symptoms indicated pulmonary embolism. He has been investigating the records of this group of 22 sudden deaths to determine whether the embolus could have been successfully removed. In 12 cases, death occurred instantaneously, and yet autopsy in 7 of the 12 revealed embolism in 4, the findings very similar to those in the more protracted cases of embolism. In one case a thrombus about 7 cm. long, about the size of a pencil, was found at the bifurcation of the pulmonary artery and it could have been readily removed. The Trendelenburg operation is indicated, therefore, in such cases when conditions are favorable for immediate operation. In 10 other cases the syndrome of the embolism persisted from ten minutes to three hours before the fatal termination. Autopsy revealed embolism in 6 and conditions would have been favorable for operative intervention in 5 cases. In 4 others the assumed embolism did not exist; these 4 patients were about 50 and 70, and were being treated for a broken arm or femur or ovarian cyst, with no threatening symptoms of heart trouble. A syndrome characteristic of pulmonary embolism suddenly developed in the midst of apparently complete well-being, and death followed in from ten to thirty minutes and autopsy disclosed merely brown atrophy or fatty degeneration of the heart. In the 6 cases of positive findings the embolus extended to the remotest ramifications of the artery in 1, but in others the embolus was short and straddled the bifurcation or was loose in the left branch of the artery. In 3 other cases the typical syndrome of embolism developed suddenly in patients between 47 and 58 after an operation for gallstone or pyloric stenosis or inflamed varices on the legs. An operation was debated, but under intravenous digitalis and subcutaneous camphor and caffein the heart action grew stronger and the embolism tempest blew over, but in the oldest patient, with the pyloric stenosis, signs of gangrene of the lungs developed in a few days to which the patient succumbed; the embolism gangrene involved nearly the whole of the left lower lobe. Körte advocates in case of the onset of the embolism syndrome, morphin to tranquilize the respiration, then a preparation of digitalis injected into a vein while all is made ready for an operation which then follows if these measures fail to improve, unless contraindicated by the general condition.

112. **Importance of Hypersecretion in Origin of Pyloric Stenosis in Infants.**—Engel reports from Schlossmann's pediatric clinic at Düsseldorf two cases of typical stenosis of the pylorus in infants in whom the stenosis syndrome had probably been preceded by a phase of excessive secretion of gastric juice—actual gastrosuccorrhea. As he believes that "psychic gastric secretion" is out of the question in infants less than a month old, the discovery of large amounts of gastric juice in the empty stomach is, he asserts, necessarily pathologic. He accepts it as proved that hypersecretion alone without hyperacidity is able to induce spasmodic contraction of the pylorus. The stenosis is purely spastic at first, as evidenced by the previous unrestricted passage of fluid. Under the influence of the spasmodic contraction the pylorus becomes more or less hypertrophied, so that after the subsidence of the hypersecretion and of the spasmodic contraction the lumen of the pylorus is left a little smaller and several weeks may elapse before entirely normal conditions are restored. This assumption of the primary importance of the gastrosuccorrhea explains all the features of pyloric stenosis in infants. In both of the cases and in others in the literature small intercurrent hemorrhages occurred in the stomach, the presence of the blood inducing such profuse secretion of gastric juice that violent paroxysms followed. In one case the child vomited forty times in twenty-four hours and in the other, in which the hemorrhage was very small, the child vomited ten times in a few minutes and 50 c.c. of the stomach content were aspirated almost at once. His cases are instructive, as in both feeding was exclusively by way of the intestines, the stomach being entirely excluded. He is inclined to accept a nervous disturbance as the basis of the whole trouble—an isolated secretory anomaly.

116. **Non-Operative Treatment of Cardiospasm.**—Makkas reports two cases of severe cardiospasm in young men, with extreme dilatation of the esophagus, the symptoms having been in evidence for nearly three and five years, respectively. Both patients were cured by gradual dilatation of the cardia with Gottstein's sound, which consists of an inner and outer rubber bag with an inelastic thick silk interlining between the two. The bag is introduced and then filled with water, the soft even pressure of the spindle-shaped distended bag effectually combating the spasm. Gottstein has reported five cures in seven patients thus treated.

Medizinische Klinik, Berlin

July 25, V, No. 30, pp. 1105-1144

120 Blood Pressure and Courses of Mineral Waters. (Blutdruck und Trinkkur.) H. Strauss.
121 *Infiltration Treatment of Sciatica. (Infiltrationstherapie der Ischias.) A. Bum.
122 Bacteriologic Study of Streptococci. (Streptokokkenversuche.) B. Zoeppritz.
123 Colloidal Chemistry and Balneology. H. Schade.
124 Treatment of Typical Fracture of the Radius. P. Glaessner.
125 Keratinized Pills. (Die [illegible] inndarmpillen im Lichte der neueren [illegible] Golodetz.
126 Medical Certificates. (Ue[illegible] und Gutachten.) T. Rumpf.

121. **Infiltration Treatment of Sciatica.**—Bum reports that more than half the patients were cured by the infiltration technic in 308 cases in his practice during the last four years and a half. The proportion was 52.2 per cent. cured and 23.9 per cent. improved in the 46 subacute cases, and 63.5 per cent. cured and 19 per cent. improved in the 228 chronic cases, the duration of the sciatica ranging from four weeks to seventeen years. The duration of the affection did not seem to influence the effect of the infiltration treatment, and the cure was permanent, the patients being absolutely free from pain for months and years without any efforts to spare the limb. He

never applies this treatment in the acute cases, as recent neuritis yields to bed rest and medicinal or physical diaphoresis. The infiltration technic aims to detach, without the knife, the perineuritic adhesions that have formed around the formerly inflamed nerve. If the result is not realized in one sitting, the injection should be repeated two or three times. He uses plain physiologic salt solution, injecting from 100 to 120 c.c. at once under strong pressure, the patient in the supported knee-elbow position, the cannula, 1.8 mm. in diameter and about 10 cm. long, introduced at the point on the thigh where the long head of the biceps is crossed by the lower edge of the gluteus maximus. The needle is introduced for about half its length and then the proximal end is lowered, while the needle is pushed slowly in for about 3 cm. farther. This brings the point to the sciatic nerve and the injected fluid pours into the nerve sheath, breaking up adhesions and setting the nerve free. He never made more than four injections in any case. Recurrence was observed in 4.7 per cent. only.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

July, XXX, No. 1, pp. 1-136

127 *Treatment of Elongated Cervix by Supravaginal Resection of the Cervix with Retention of Connection with the Vagina. (Ein neues Verfahren der supravaginalen Cervixresektion mit Erhaltung der Portio vaginalis bei Elongatio colli.) R. Werth.
128 Statistics of Operations for Uterine Cancer at Prague. O. von Franqué.
129 Morphologic Behavior of Minute Glands Encircling the Nipple. (Morphologisches Verhalten der Montgomeryschen Drüsen.) K. Natanson and W. Goldschmidt.

127. **Supravaginal Resection of Cervix.**—Werth compares the technic and ultimate outcome in six cases of elongated cervix requiring operative interference treated by the old technic and six treated by a new method, of which he gives an illustrated description. The unduly long cervix is resected above its implantation in the vagina, working through a median incision in the anterior roof of the vagina. The stumps are sutured together with catgut through the entire thickness of the cervix wall.

Münchener medizinische Wochenschrift

July 20, LVI, No. 29, pp. 1457-1520

130 Outlook for Treatment in Progressive Paralysis. K. Alt.
131 Behavior of Organic Preparations of Arsenic in the Human Body. (Verhalten organischer Arsenpräparate im menschlichen Körper.) P. Fischer and J. Hoppe.
132 The Cobra Venom Hemolytic Reaction. (Eine Reaktion im Blute von Geisteskranken.) C. Fraenkel, Kathe and Bierotte. Id. (Hemmung der Kobrahämolyse durch das Serum von Geisteskranken und körperlich Kranken.) W. Beyer and W. Wittneben.
133 Roentgen Examination of Movements of Bladder. (Biozystographie.) A. v. Lichtenberg, H. Dietlen and W. Runge.
134 Pathology of the Metabolism in Epilepsy. (Zur Stoffwechsel- [illegible] psie.) W. Tintemann.
135 [illegible] the Hypophysis. (Zur Kenntnis der [illegible] in der Hypophysis.) R. Allers.
136 [illegible] nd Lecithin. (Narkose und Lezithin.) J. Nerking.
137 [illegible] Reaction in Diagnosis of Leukemia. [illegible] J. Peters.
138 [illegible] perations. (Was kann und muss man [illegible] sicht von der Radikaloperation der chronischen Mittelohreiterung [illegible]
139 *Ischemia Induced in Congested [illegible] ation of Cold to the Back of the [illegible] tisch- therapeutischer Vorschlag für [illegible] O. Muck.
140 *Abdominal Operations in Country Practice. (Bauchoperationen [illegible] sen.
141 Carbon [illegible] Zwei Fälle von Kohlendunstvergif [illegible] und gerichtlich-medizinischer Beleuc [illegible]
142 Suction [illegible] of Acute Coryza in Infants. (Zur Behandlung des akuten Schnupfens der Säuglinge.) W. Schultz.

139. **Application of Cold to Back of Neck to Relieve Congestion in Nose.**—Muck has been making practical application of Winternitz' suggestion to influence the lumen of the vessels by reflex action from cold or heat applied locally to the skin. He has found that cold water poured over the back of the neck or a cold douche applied for a few seconds has a decided influence in relieving congested conditions in the nose and also bronchial asthma if it is due to a nasal reflex. He ascribes the result to the direct action on the vasomotor and respiration centers; the same effect is not realized by application of cold elsewhere to the body nor by mere application of cloths wrung out of cold water. The mechanical stimulus of the pouring water seems to be an important element in the relief experienced. Before dressing in the morning the simple application of the cold douche to the back of the neck gives great relief in chronic simple rhinitis and is liable to relieve the suffocation in asthma.

140. **Abdominal Operations in Country Practice.**—Paysen relates a number of incidents from his experience to show the necessity for immediate operation on the spot in many cases of incarcerated hernia, etc., the patients owing their lives to his prompt intervention, and he urges the country practitioner not to hesitate to undertake such at need without temporizing.

Wiener klinische Wochenschrift, Vienna

July 22, XXII, No. 29, pp. 1023-1058

143 Pathology of Rabies. (Wutkrankheit beim Menschen.) R. Paltauf.
144 The Hemolytic Cobra Venom Te [illegible] hlicher und tierischer Blutkörperchen [illegible] unter normalen und pathologischen [illegible] aus. O. Pötzl, E. Ranzi and H. Ehrlich.
145 Mixed Leukemia. (Zur Frage der gemischten Leukämie.) A. Herz.
146 *Operation for Femoral Hernia [illegible] (Operation der kruralen Hernie a [illegible] Frank.
147 *Radical Operation for [illegible] Technic. F. v. Gschmeidler.
148 *Preserved Human Milk for Feeding Weakly New-Born Infants. (Die [illegible] ährung lebensschwacher Neuge [illegible] auenmilch nach Meyerhofer [illegible]
149 Early Roentgen-Ray Diagnosis of Intestinal Stenosis. (Zur Frühdiagnose der Darmstenosen mittels Röntgenstrahlen.) R. Bacher.

July 29, No. 30, pp. 1059-1090

150 Interaction of Glands with an Internal Secretion. (Weitere Mitteilungen über die Wechselwirkung der Drüsen mit innerer Sekretion.) W. Falta.
151 Dependence on the Normal Functioning of the Liver of the [illegible] Acid. (Abhängigkeit der [illegible] von der normalen Funktion [illegible] d H. Friedrich.
152 Re [illegible] d Corpuscles. (Zur Kennt- [illegible] Raubitschek.
153 Su [illegible] Median Nerve a Year after [illegible] ges.

146. **Operation for Femoral Hernia Through the Inguinal Canal.**—Frank's technic is instructively shown in ten illustrations. The sac is drawn out through the inguinal ring, ligated and resected, the ends of the ligature drawn out through the muscles some distance above, where they are tied. The tendency to hernia is then corrected by suturing the posterior margin of Poupart's ligament to the pectineal fascia and the periosteum of the horizontal branch of the pubis, followed by passing four threads through the triangular ligament drawing it up to the muscles above.

147. **Roux' Nail Operation for Femoral Hernia.**—Roux fastens with a double-pointed nail the edge of Poupart's ligament to the horizontal ramus of the pubis as a radical means of curing femoral hernia, and Hochenegg has applied this technic in 38 cases of femoral hernia since 1904, all but 8 in women, general anesthesia being used in 33. The ultimate outcome in 28 cases is known, the interval ranging from six months to four years. The results have been satisfactory in every respect, even in one case in which the nail was felt to be loose. The outcome compares favorably, he considers, with other methods, while the simplicity of the operation commends it for certain cases.

148. **Preserved Human Milk for Infant Feeding.**—Rosenfeld regards Mayerhofer and Pribram's suggestion that human milk can be preserved and used for artificial feeding of feeble new-born infants as a great advance, provided that the production is restricted to hospitals and asylums and kept under strict medical supervision. The milk is drawn with a valve breast pump, described in these columns May 29, 1909, page 1803; this simulates the intermittent sucking of the child and the breast responds by yielding all its milk. Nearly 3 ounces can thus be drawn in a few minutes. The breasts seem to secrete more milk as more demands are made on them, so that the women's own children do not suffer from loss of the extra amount drawn. He calculates that the three or four maternities at Vienna, with an average of 120 parturients, could easily supply about 20 quarts of fresh breast milk a day for this purpose, ample to supply 50 feeble new-born with the life-giving fluid. In order to keep a sufficient supply on hand, the mixed milk is sterilized by the Budde process, that is, addition of a small proportion of hydrogen dioxid as the milk is heated to a moderate temperature, not over 55 C. in

the water bath. This sterilizes it completely while not impairing its vital properties, taste or aspect, according to experiences reported by Escherich and others. Infants fed on breast milk thus prepared and kept until needed seemed to thrive excellently, in every respect as if fed directly from the breast. The main point, Rosenfeld emphasizes, is to keep this milk supply out of commercial hands, as it should be a strictly medical affair.

Gazzetta degli Ospedali e delle Cliniche, Milan

July 22, XXX, No. 87, pp. 913-920

154 Cerebral Hemorrhage in Children. (Emorragia cerebrale nell'infanzia.) G. Ghetti.

Policlinico, Rome

July 11, XVI, No. 28, pp. 869-900

155 *Stricture of Female Urethra. (Restringimenti uretrali nelle donna.) F. Cuturi. Commenced in No. 27.
156 *Chloroform and Ascarides. V. Barnabo.

July 18, No. 29, pp. 901-932

157 The Paravertebral Triangle of Dulness in Pleurisy. (A proposito del triangolo paravertebrale opposto di Grocco.) T. Silvestri.
158 Antitoxin in Prophylaxis of Diphtheria. (Della sieroprofilassi antitossica in un'epidemia di difterite.) A. Politi.

July, Medical Section, No. 7, pp. 289-328

159 Improved Technic for Opsonic Method. (Di un nuovo metodo opsonico. Teoria opsonica. Di un metodo fagocitario.) M. Copelli.
160 Nature and Pathogenesis of Uni[illegible] in
Heart and Kidney Disease and [illegible]
menti [illegible] ei [illegible]
negli [illegible]elizlani.
161 *Gastric [illegible] Test. (Carcinoma gastrica e prova di Salomon.) G. Alessandri.

155. **Stricture of the Female Urethra.**—Cuturi concludes his study of the treatment of stricture by emphasizing that the dilatation must act dynamically, not mechanically. Extreme gentleness is necessary. In a hemophilic patient he found it possible to prevent recurrence of hemorrhage from introduction of the sound by previous instillation of 2 per cent. silver nitrate. Traumatic and obstetric stricture requires internal urethrotomy, as dilatation is ineffectual in callous tissue.

156. **Chloroform and Helminthiasis.**—Barnabo was performing a laparotomy in a young women when severe retching was observed with acute suffocation and threatening syncope. Opening the patient's mouth to make traction on the tongue, the tip of an ascaris was seen in the throat and prompt recovery followed its removal. Two others were vomited about six hours later, after which recovery was uneventful. He was present in another case in which fatal suffocation from worms occurred during chloroform anesthesia, and thinks it possible that some of the "chloroform deaths" on record may have been due to unsuspected worms. He now makes a practice of inquiring before operating whether the patients have known of the presence of helminths. His patient told him afterward that she had passed some helminths shortly before. If he had been aware of this he would have postponed the operation until after a course of worm medicine. He thinks that the chloroform is responsible for the migration of the helminths.

161. **Gastric Cancer and the Salomon Test.**—Alessandri reports the findings of the Salomon test applied in twelve cases of stomach trouble suggesting cancer, the results being controlled by other tests. In every case of carcinoma of the stomach confirmed by the course of the affection the Salomon test gave positive findings, while they were negative when the cancer was in a neighboring organ or if the trouble was of other origin. The reaction may be positive when the ulceration is so small that its presence is not revealed by the ordinary clinical methods. It seems to be established that cancer of the stomach displays a tendency to ulcerate exceptionally early, which enhances the value of this test. The technic was described in The Journal, Sept. 12, 1903, page 694.

Riforma Medica, Naples

July 12, XXV, No. 28, pp. 757-784

162 *Inguinal Hernia in Children. (Contributo statistico all cura radicale dell'ernia inguinale nei bambini, con speciale riguardo a quelle del cieco e dell'appendice.) G. Andrei.
163 Two Cases of Inguinal Hernia of the Ovary. C. Laccetti.

July 19, No. 29, pp. 785-812

164 Atrophy of the Hand. (Atrofia della mano, del tipo Aran-Duchenne, segmentaria, congenita, eredofamiliare, non progressiva.) R. Ciauri.
165 *Experiences with 206 Cases of Mammary Cancer. L. Fiori.

162. **Inguinal Hernia in Children.**—Andrei reports the operations for inguinal hernia at the Florence surgical pediatric clinic, a total of 430 inguinal hernias in 395 children, all but 38 being boys. The Bassini technic was used except in one case. The mortality was 1.77 per cent. One of the 7 children who died was a child a month old with strangulation of the hernia ten days before the operation. Inguinal hernia is congenital less frequently than is generally assumed, and strangulation is comparatively rare, while the effects are less serious than in adults at first. The experiences with 6 children operated on under the age of six months and 59 under twelve months, 97 between one and two years and 47 between three and four, confirm the advisability of operating early, as herniotomy is borne well even by very young children, and the single operation is preferable to the wearing of a truss if conditions do not permit of scrupulous care. Strangulation was observed in 14, that is, 3.25 per cent. of the total 430 hernias, and in all but 4 cases were in boys less than a year old. The tendency to strangulation and to recurrence is much less in children than in adults, owing to the elasticity of the tissues. In 16 cases the appendix was found in the hernia, but Andrei advises against removing it, if sound, at the herniotomy.

165. **Mammary Cancer.**—Fiori reviews the experiences with 206 cases of mammary carcinoma at Ceci's surgical clinic at Pisa, 1888-1908. One patient was between 20 and 25 and one between 25 and 30; 13 between 30 and 35 and 22 between 36 and 40, while only 3 were over 70. He has been able to follow the ultimate outcome in a large proportion of the cases. Among these, of the 7 patients with small tumor, nonadherent to the skin, with only a few glands in the axilla slightly enlarged, 4 are still in good health from seven to eleven years after the operation, one succumbed to an intercurrent disease, one was healthy when last heard from and one returned in a few months with an inoperable recurrence. Of the 40 with more advanced cancer, 20 are still in good health after three or more years, and of the 23 with involvement of the entire breast, the tumor adherent to the skin and pectoral muscles with ulceration or multiple nodules and metastasis, one is still alive after three years; 65 per cent. succumbed to generalization of the malignant disease and 30 per cent. to local recurrence, while 2 others were in good health after seven and seventeen months. The permanent cures in these three groups of cases are thus: 80 per cent.; 50 per cent. and 5 per cent., for intervals ranging from three to thirteen years to date. The interval between the first signs of the tumor and the operation was from fifteen days to three months in 20, and between one and five years in 52; in 5 cases there had been an indolent nodule since early life.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

The Medical Directory of India, Burma and Ceylon, 1909. Second Edition. Cloth. Pp. 167. Compiled and Published by the Editor of *Practical Medicine*, Delhi.

The Sexual Disabilities of Man. By Arthur Cooper, Consulting Surgeon to the Westminster General Dispensary. Cloth. Pp. 184. Price, $1 net. New York: Paul B. Hoeber, 1909.

Manual of Therapeutics. Referring Especially to the Products of the Pharmaceutical and Biologic Laboratories of Parke, Davis & Co., Detroit, 1909. Flexible Leather. Pp. 643. Given free to physicians on request, by Parke, Davis & Co.

Semmelweis, His Life and His Doctrine. By Sir William J. Sinclair, M.A., M.D., Professor of Obstetrics and Gynecology in the University of Manchester. Cloth. Pp. 369. Price, 7 shillings 6 pence. Manchester: At the University Press, 1909.

Transactions of The [illegible] and Gynecological
Association. Vol. XXI. [illegible] held at St. Louis,
Dec. 15 to 17, 1908. Edit[illegible] M.D, Cloth. Pp.
488, with illustrations. Published by the Association, 1909.

[illegible] Gilbert Ballet, Professor *agrégé* at the
[illegible] Paris. Translated from the Third French
[illegible] Smith, M.D. Cloth. Pp. 408, with 7
[illegible] net. New York: Paul B. Hoeber, 1909.

The Open-Air Treatment of Pulmonary Tuberculosis. By F. W. Burton-Fanning, M.D., F.R.C.P., Physician to the Norfolk and Norwich Hospital. Second Edition. Cloth. Pp. 184, with illustrations. Price, $1.50 net. New York: Paul B. Hoeber, 1909.

The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

Volume LIII CHICAGO, ILLINOIS, SEPTEMBER 11, 1909 Number 11

Original Articles

DIAGNOSIS OF OTOGENIC MENINGITIS

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Until recent years, the early diagnosis of otogenic meningitis was of little practical significance, except inasmuch as it enabled the physician to prepare the friends of the patient for the fatal termination of a disease, which in its suddenness often comes as a lightning from a clear sky. But since surgical treatment has been employed in this disease, and not without success, the importance of an early diagnosis has increased appreciably inasmuch as it may indicate an operation to prevent this fatal result.

Before entering on the diagnosis of otogenic meningitis, a few facts as to the etiology may be mentioned.

Meningitis, which is according to all statistics the most frequent intracranial complication in suppurative otitis media, appears very rarely in infants under a year. It is not rare after the fortieth year, but older children and young people are those most frequently attacked.

It is generally assumed that otogenic meningitis is, in most cases, caused by a retention of pus in the middle ear. My experience does not support this supposition. I have not, as a rule, found otoscopic signs of retention in cases of otogenic meningitis, and in about half of the cases observed by me the mastoid region did not exhibit the slightest trace of infiltration or tenderness. I am, therefore, inclined to believe that the nature of the suppuration, combined with the anatomic relations of the petrous portion of the temporal bone and the mastoid process, play the most important part in the pathogenesis of otogenic meningitis.

As to the nature of the suppurative process, various observers and I myself have most frequently found pneumococci, staphylococci and streptococci as the cause of the inflammation of the soft membranes of the brain in cases of otogenic meningitis. Another fact elicited by my researches is that in most cases of otitis media causing meningitis there is a very marked *acute* osteitis of the mastoid process, even when the suppuration of the tympanum and the osteitis of the mastoid process are chronic. This easily explains why otogenic meningitis is frequently preceded by pains in the diseased ear.

Meningitis of otogenic origin is often produced through a suppuration of the labyrinth, a fact to be borne well in mind during operation. That phlebitis of the sigmoid sinus is not unfrequently the medium is also of practical importance in eventual surgical interference. Otogenic meningitis is, in other words, often combined with suppurative otitis intima and with sinus phlebitis, the two latter being often primary in relation to the meningitis. It is, however, my impression that the suppuration of the middle ear now and then spreads explosively to all parts of the cranial cavity simultaneously, thus causing two or more intracranial complications.

As to the nature of the meningitis caused by otitis media, it must be observed that the term "meningitis" is here always used as an expression for "diffuse purulent leptomeningitis." Of this disease there is, in my opinion, but one *trustworthy objective sign, viz., turbidity* of the cerebrospinal fluid, emptied by lumbar puncture, caused by overproduction of round cells. I lay much stress on this objective sign, because an otitis *media can cause all the subjective* symptoms of a meningitis and also the objective signs, especially rigidity of *the neck and the* sign of Kernig, without producing a diffuse purulent meningitis—cases which are often classified under the term of "meningitis serosa." On the other hand, a few cases are reported in literature of abscess of the brain and of phlebitis of the sigmoid sinus with turbidity of the cerebrospinal fluid, in which the postmortem examination did not reveal any macroscopic signs of purulent leptomeningitis. I consider these few cases, however, as cases of diffuse purulent meningitis, in which the meningitis has been cured prior to the death of the patient.

Symptomatically otogenic diffuse leptomeningitis may be described as an acute febrile disease with "diffuse" brain symptoms, restlessness, insomnia, irritability, alternating with drowsiness, delirium, etc. "Focal" brain symptoms are, however, very frequent, viz.:

Ocular: nystagmus—often, though of labyrinthal origin—spasms and pareses of the muscles of the eyeball (double vision, squinting, conjugated deviation).

Facial: Paralysis of the facial nerve.

Relating to the extremities: Jackson's epilepsy, hemiplegia, etc.

The appearance of "focal" brain-symptoms, caused *either by disturbances of the* circulation in the surface of the brain or by diffuse encephalitis, often gives rise to a *false supposition* of the existence of an abscess, rendering diagnosis extremely difficult.

The objective signs are: Vasomotor disturbances of the skin (pallor alternating with redness of the face, "taches cérébrales," the sign of Trousseau, hyperesthesia, etc.), irregularity of pupil action, and rigidity and contraction of groups of muscles causing rigidity of the neck and the sign of Kernig. I have, however, observed three cases of otogenic meningitis in which neither of the two latter symptoms were present, although the patients were under observation up to the time of their death.

Changes of the fundus of the eye are not frequent in patients with otogenic meningitis. In twenty-four consecutive cases observed by me only four presented choken disc or optic neuritis.

The fever is seldom low (about 100 F.); in exceptional cases there may, however, be *no rise of the temperature* in the beginning of the disease. More frequently, and especially during the onset of the meningitis, it is very high (about 104) and the affection then often assumes the appearance of an acute infectious disease (pneumonia, typhoid fever, influenza), from which it may be difficult to distinguish it. The temperature is, however, generally only moderately raised, varying from 101 to 103. Even in cases complicated with sinus phlebitis the fever hardly ever assumes a pyemic type. The pulse is generally quick, and not infrequently irregular.

Albuminuria appears now and then.

The diagnosis of otogenic meningitis is often difficult. First, it may be difficult to decide whether the meningitis is due to the otitis media present or whether the latter be an accidental complication. In such, by *no means rare, cases, the circumstance that the affection* of the brain has developed some time after the ear disease is all that speaks for a connection between the two; for, in my experience, acute suppuration of the middle ear rarely produces meningitis before it has lasted a week or more, the time in the cases I have observed varying from three days to five months. In other words, otogenic meningitis does not generally appear until after the infectious agent has acted for some time on the soft membranes of the brain. There is, furthermore, reason to believe that there is a stage of the otogenic meningitis in which the subjective and objective symptoms of the meningitis may be fully present, but in which the pathologic changes produced by the diffuse purulent leptomeningitis may be as yet undeveloped. This stage Körner, the eminent German otologist, to whom we are so much indebted for his contributions to the pathology of the otogenic intracranial complications, calls a preliminary stage (*Vorstufe*) of meningitis. I would rather suggest the term "initiatory stage of meningitis," as I include under this head only cases in which the cerebrospinal fluid has already become opalescent. This is of practical importance, inasmuch as it gives us a right to hope for a successful operative treatment even in cases where all subjective and objective signs of meningitis are developed, if only the operation is performed early.

Second, the diagnosis of meningitis in cases of chronic or acute suppuration of the middle ear is often very difficult, for otogenic meningitis may simulate or may be simulated by "meningeal irritation" or "meningismus" without any organic disease of the brain, by pneumonia and other acute infectious diseases (typhoid fever, septicemia, influenza and malaria), tuberculous meningitis and by other otogenic intracranial diseases.

True meningitis differs from the series of symptoms called "meningeal irritation" or "meningismus," i. e., the well-known meningeal symptoms often appearing in children and young persons during the course of an acute otitis media, inasmuch as meningitis generally (1) appears some time after the onset of the ear disease, (2) starts with great suddenness and intensity, (3) may exist without symptoms of retention or of mastoiditis, (4) runs its course with increasing rapidity and intensity of the symptoms (a circumstance on which I lay much stress, and which has not been sufficiently recognized), and (5) does not occur in infants, in whom "meningeal irritation" often appears.

Tuberculous meningitis differs from meningitis due to otitis, inasmuch as tuberculous meningitis generally (1) is secondary to other tuberculous manifestations, (2) begins with a preliminary stage, (3) runs with less violent symptoms, and especially with a lower temperature, (4) exhibits "focal" brain symptoms more frequently than otogenic meningitis, and (5) is very rare in persons over the age of forty.

Typical otogenic cerebral abscess differs from meningitis due to otitis in the following points: Cerebral abscess has (1) a distinct prodromal stage, (2) slower development of the symptoms; further (3), often exhibits "focal" symptoms, (4) produces slow cerebration and slow pulse.

All subjective and objective signs may, however, lead to a wrong diagnosis, excepting only turbidity of the cerebrospinal fluid emptied by lumbar puncture. I lay great stress on this procedure as a diagnostic agent, having used it in my hospital over a hundred times without ill effects, and in several cases it has been the only way in which a correct diagnosis could be obtained. A further proof of the importance of this diagnostic agent is that, in some of these cases in which lumbar puncture was dry or the fluid mixed with blood, no correct diagnosis could be arrived at until postmortem.

In cases of meningitis of aural origin the cerebrospinal fluid is more or less opalescent in the *first stage of the disease, becoming more and more milky* in appearance, and at last puriform. Under the microscope numerous round cells are always found and nearly always an abundance of polynuclear leucocytes. Bacteria are generally present, but I have seen a few cases in which no bacteria appeared even immediately before the fatal end of the disease.

Clear cerebrospinal fluid does not, however, with certainty exclude meningitis, as it always takes some time for the fluid to become opalescent. In three cases of postoperative meningitis observed by me more closely I found in one case that the cerebrospinal fluid was still normal twenty-four hours after operation, in another it was turbid twenty-six hours, and in the third thirty-six hours after.

If, then, in the first stage of meningitis the puncture yields a clear fluid, it is necessary to repeat it once or twice to be certain.

In cases of tuberculous meningitis the cerebrospinal fluid is generally only slightly opaque, often containing small flocculi of fibrin. The cells are nearly all mononuclear, and bacteria are seldom found. In a few cases I found bacteria which in the earlier stages of my experience led me to the false belief that I had to do with otogenic meningitis. Tubercle bacilli are sometimes present.

The therapeutic value of lumbar puncture is in my opinion almost nil.

Besides lumbar puncture there are two diagnostic agents of value, viz., examination of the hearing and of the static part of the labyrinth. The first examination consists in proving whether there is any hearing in the affected ear or not, total deafness speaking in favor of a labyrinthine suppuration with secondary meningitis. The best method is to apply the noise-apparatus of Barany in the healthy ear and then to examine whether the patient hears the speaking voice with the diseased ear. This method is, however, often difficult of application when the patient is a child, or when there are more pronounced brain disorders. This objection does not apply to the examination of the static function of the labyrinth. It is performed by syringing the diseased ear with cold water (50 F.); if the static part of the labyrinth is destroyed, no nystagmus is produced, while in cases in which this part is intact the eyeball makes small jerks toward the opposite side, especially when the patient's eyes are turned in that direction. The destruction of the static part of the labyrinth points to meningitis produced by suppuration of the inner ear. A functional examination of the labyrinth can also be useful in cases where both ears are diseased, the ear in which the labyrinth is destroyed being the probable cause of the meningitis.

Havnegade 31.

DISPOSAL OF SPUTUM

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For some time past I have given considerable attention to the disposal of sputum, and the idea has very strongly impressed itself on me that we are altogether too careless in disposing of this dangerous factor as regards health, especially in workshops where large numbers of persons are employed and in conjunction with hotels, saloons, barber shops, railway stations, public buildings, etc.

Signs will be found displayed in almost every town and city of the United States which caution persons not to spit on the floor, but in cuspidors, even invoking legal penalties for failure to observe the injunction. Yet the methods for the disposal of the contents of these receptacles are very faulty in a good many instances.

Persons with incipient and ill-defined cases of tuberculosis, as well as those suffering from this disease in its later stages, during their daily ambulations and at work at their respective vocations, use the same cuspidors to receive their expectorations as those used by uninfected persons, making the handling and disposition of the sputum a constant and ever-present source of danger to the cleaner (see high mortality from tuberculosis among servants in census reports), as well as to the community in which the factory, hotel, or public building is situated. The observing person will find that these vessels are cleaned near drinking-water places, or roughly dumped on the streets or yards adjacent to such buildings, or in the respective basements or cellars connected therewith.

The type of cuspidors in use at the present time in the great majority of cases appear to be faulty, very little attention evidently having been paid to ease and thoroughness of cleaning. The principal fault in the majority of this type and class of vessels on the market is the undercut found just below the constriction or neck. It is at this point that expectorations are received on the inner flare or side of lip; they run under this shoulder or undercut and remain lodged or fixed there. The repulsiveness of the cleaning operation almost prohibits the cleaner from placing his hand or even a sponge under this point for the proper removal of expectorations.

While, of course, the moist tubercle bacillus can not be readily transported by currents of air, yet it is viable and sooner or later dries in one manner or another, and is easily transported.

While breaking into several parts a number of cuspidors constructed along the lines of pattern shown in Figure 2, which were picked up in various quarters of cities, I found incrustations in some instances one-half inch in thickness, and from a dry to a semi-solid consistency, but, without exception, all in a putrid condition, and furnishing a most fertile culture media.

In designing the type of cuspidor shown in Figure 1 and now adopted by this branch of the government I have tried to avoid all the objectionable features found in the older styles, of all shapes, some of which are very ornate, but all showing, more or less, that very little thought had been given to the proper and thorough cleansing of such receptacles.

The sharp flare or lip shown in Figure 1 is intended for quick drainage into solution placed within vessel and hereinafter described. Sufficient constriction has been left at the neck partially to hide the contents in the cuspidor for esthetic reasons; yet the opening permits all parts of the vessel to be placed under observation as to thoroughness in cleaning.

The undercut or deep shoulder has been avoided in the type shown in Figure 1, which permits easy, rapid cleaning with a cotton dish-mop and boiling water in the absence of special facilities for such specific cleaning. The bottom of the cuspidor shown in same figure is slightly convex and in continuity with the round sanitary corners or coves, all with the special object in view of self-draining and easy, effective cleaning.

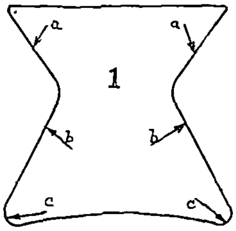

Fig. 1.—Self-draining sanitary cuspidor. Note sharp flare (a) to drain quickly, absence of undercut (b), and rounded corner (c) continuous with convex bottom.

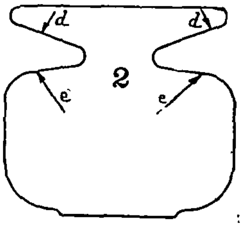

Fig. 2.—Insanitary cuspidor. Note flat flare (d), which is slow in draining, and sharp undercut or shoulder (e).

In the general system that has been adopted, illustrated, and presented herewith the cleaner picks up the soiled and infected cuspidors from the floors of the work-rooms in a nested fashion five at one time, after a manner shown in Figure 3, by a specially designed sanitary lifter or clutch, made of two pivoted members surrounded by a guard and surmounted by a handle and a simple locking device to relieve the constant pressure of the hand when the loaded lifter is to be carried any distance. The idea of this device was first conveyed to me by the obstetrical forceps, from which it is an evolution, so to speak.

The cuspidors are then carried by the same lifter to a box truck, shown in Figure 3, which is lined with galvanized sheet iron, and are deposited, still nested, between gas-pipe standards that are threaded and screwed through the bottom of truck to ensure rigidness, such uprights preventing the tipping of vessels, and also permitting the easy entrance of the lifter to pick up five sterilized cuspidors contained in same truck, at the same time that the five infected or soiled vessels are deposited. This permits their being laid down or distributed by the same instrument in the place of those picked up, serving, additionally, as a time-saving procedure.

After the trucks are filled in this manner, on each floor, they are wheeled to a freight elevator and dropped to the basement, where is situated the sterilizing chamber, shown in Figure 4.

The truck is wheeled directly into the chamber and up near the edge of trough; the side of the box truck is then removed, and the operator, as shown in Figure 4, seizes the lip or flange of the soiled and infected cuspidor with a short pair of hand forceps, lifts the vessel clear of the gas-pipe standards fastened to the bottom of the truck, and plunges the cuspidor into the boiling water in the trough, and, at the same time, with a pronation of the forearm, overturns the vessel *under* the water.

By this method the entire contents escape into boiling water, which cooks or coagulates the albumin in the micro-organisms, if such be present, and at the same time renders sterile other material before passing through the outlet, which is simply a pipe, surmounted by a wire tripod, between the wires of which boiling water flows constantly, and which thus permits the easy escape of all material under 1½ inches in diameter, but stops banana-skins, apple-cores, etc., that would otherwise clog the pipe leading to sewer, which is 3 inches in diameter.

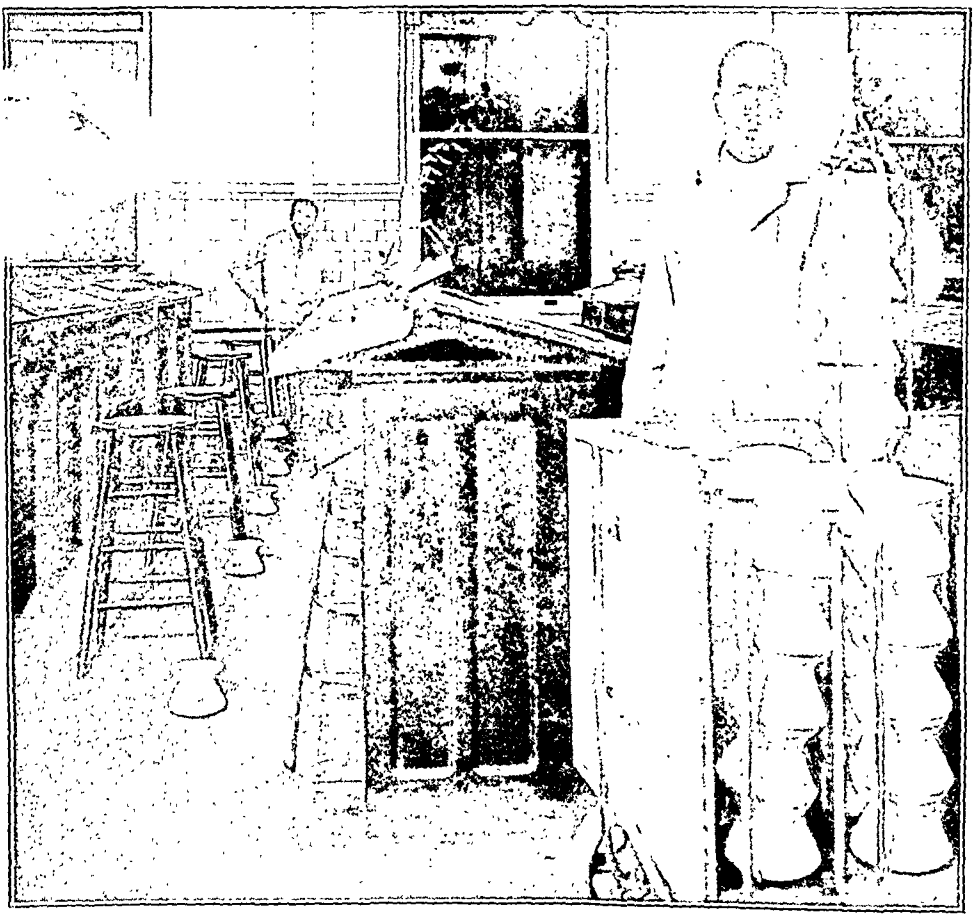

Fig. 3.—Method of collecting cuspidors from floors of workrooms.

Still grasping the flange or lip of cuspidor after it has been overturned in water with the short forceps before described, the operator swings the now upright and roughly cleaned cuspidor forward under a jet of live streaming steam, which is released by pressure on a foot tread, the posterior part of which is connected with a chain to a lever in the side of an inverted steam whistle valve which it controls, and which promptly closes the instant the pressure of the foot is removed from the tread, thus shutting off the jet of steam in an automatic manner. Figure 4 shows the first cleaner and this mechanism in action; and at the rear end of the trough the other cleaner is shown, who has completed the procedure just described and is about to thrust the now sterile cuspidor into rack clutch, still grasping the short forceps containing cuspidor. When sticky or tenacious material persists in clinging to vessel and the jet of steam fails to dislodge the débris, it is instantly removed by a hand dish-mop suspended by chain to rack and which is allowed to fall back in the boiling water after it has been applied by the other hand of the cleaner to remove substance on surface of cuspidor. The mop is therefore always sterile, within easy reach, and readily picked up by the chain attached to the handle (R) by the disengaged hand of the cleaner.

In Figure 5 the truck is being refilled by one cleaner, who is plucking the thoroughly washed and sterilized vessels from the spring clutch on the rack for this purpose. As each layer is placed in the truck previous to its transmission back to the work-room the other cleaner is pouring, from an ordinary hot-water can, a solution of potassium permanganate of a strength approximately 1 to 2,000 into each cuspidor, to the amount of four ounces, where the solution remains until the vessels are next cleaned at the termination of each eight-hour shift, and thus receives and disinfects the sputum between stated cleaning periods.

At first I used a solution made up for this purpose of corrosive mercuric chlorid 7.3 gr., citric acid 7.7 gr., cosin coloring q. s., to each gallon of water, giving a strength of approximately 1 to 8,000. The mercuric chlorid was used, of course, for its germicidal properties, the citric acid[1] to retard the coagulation of the albuminoid substances found in expectorations and to prevent the formation of insoluble albuminates, thus permitting the bichlorid to permeate the mass more thoroughly. The cosin was used simply for purposes of differentiation from harmless liquids for safety in handling.

Fear of persons drinking the solution with suicidal intent and of cases of accidental poisoning among the cleaners, however, caused me to substitute potassium permanganate 1 to 2,000 as a cheap, practical, nontoxic, easily prepared, odorless disinfectant, as well as a germicide, in lieu of the former solution. I still use the bichlorid, however, in the strength of 1 to 1,000 to scour water-closet seats at the end of the day's work, and in the form of a spray of the same strength on the floors after the latter are scrubbed, allowing the solution to dry out with the damp floors. This method is better than to use the bichlorid in the wash-water, where it is precipitated as chlorids, *owing to the dirt*, etc., in the water.

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[1] Egbert in his text-book on hygiene was the first to draw attention to the use of this agent in preventing rapid coagulation of albumin.

The Government pays but 14 cents per pound for the potassium permanganate salts, and ten pounds only are used for an entire year's supply for the purpose mentioned in the building, where upward of 4,500 persons are employed under one roof. It is made up in a fresh state each night in the cans shown in illustration.

The expense and the possible objection to its pungency renders the use of formalin in a large way impracticable. Saturated solutions made up of chlorid of lime, while cheap and efficient, are objectionable on account of the odor. Solutions of carbolic acid, strength 1 to 40, are objectionable on account of odor and toxic properties in any buildings aside from institutions and hospitals. Yet, as is well known, all are efficient and practical if suitable and indicated by each particular instance.

While a great many patented antiseptics are on the market together with proprietary preparations *with high-sounding*, euphonious titles, the majority of them are expensive and mask the indications of putrefaction by their own particular odors, and do not always remove the cause. Their effectiveness, for this reason, in a good many instances is questionable.

Experience in dealing with the different temperaments and idiosyncrasies of a large number of persons gathered together for stated periods of time each day has taught me that it is a very difficult matter to please all, especially as concerns odors, although there may be no real basis for complaints.

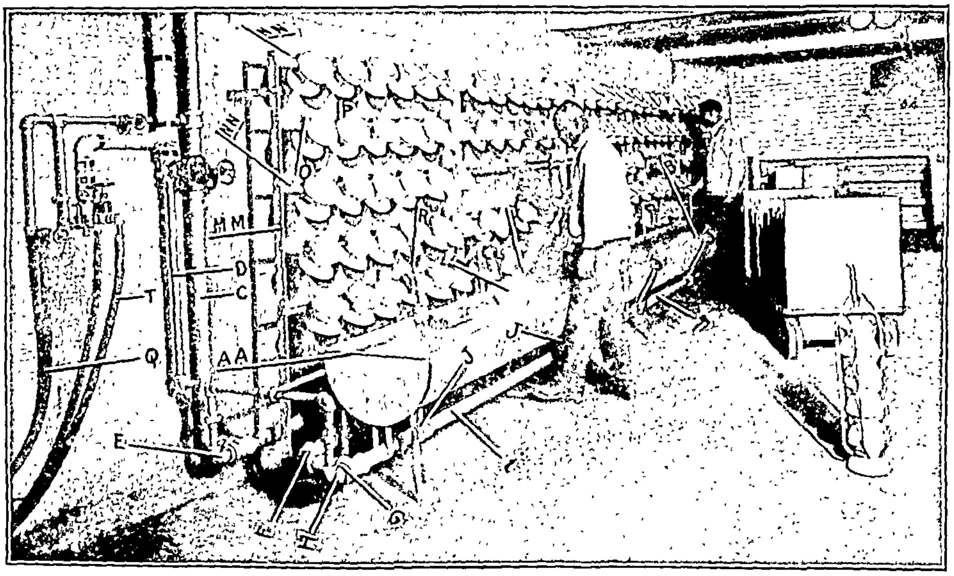

Fig. 4.—Sterilizing chamber in basement and method of unloading trucks together with procedure in washing and sterilizing the soiled and infected cuspidors. (See text for explanation of the apparatus.)

The general view of the sterilizing chamber shown in Figure 4 will be here dwelt on to some extent regarding details. The galvanized iron trough (AA) is made up of 22-gauge galvanized sheet iron, the sections being riveted together and all joints soldered. It is smaller at the fore end to permit of easy drainage toward the opening for the pipe (B) leading from the trough to the sewer. The trough rests on band iron strips, cradle fashion, terminating, on each side, by an extension bent at right angles, forming a web foot that is embedded in the cement floor after being secured by expansion bolts that ensure rigidness. The cold-water pipe (C) leading from the street main is placed at the end of the trough leading down from the wall of the room. Running parallel with it is one-inch steam-pipe (D). At the point marked E, by means of a ⅜-inch nozzle, the stream of cold water is mixed with steam, which raises the temperature to about 110 F. The then heated water continues on its way, and, by means of a short turn or bend (F), some three feet in extent, makes its return to point G, whence the partially heated water is again mixed with the jet of steam from the ⅜-inch nozzle (H), at once raising the temperature to 212 F., or the boiling point of water. This method avoids the *noise and "knock" of a direct jet of steam thrown into* a body of water. It produces boiling water in from six to eight seconds, and maintains it always at the boiling point. Nozzles are within the pipes mentioned.

The boiling water continues along the pipe (*i*) and emerges through the pipes marked JJ up into the trough by a fountain effect (K). As the water, by street pressure only, is thus forced up, the "wash" penetrates through a wire-mesh soap-pocket placed against the inner side of the trough (which does not show in the illustration), wherein is placed a bar of common washing soap, which procedure results in soap-suds with boiling water.

At the rear of the trough is placed a rack (MM) constructed of angle-iron or made of sectional gas-pipe, as the case may be, supported by vertical braces, in addition to parallel cross-pieces (NN) placed 14 inches apart, and perforated by holes every 10 inches, through which pass ⅛-inch flat-headed carriage bolts, running through the eye of the rack clutch (O) and secured by nuts on top of the cross-pieces (P). The rack clutches are made of ⅛-inch steel spring wire and are held rigid by a bolt through the eye formed by twist in loop of spring or clutch. Figure 4 shows one operator about to thrust a vessel into the clutch, which expands to receive it and then contracts around the constriction or neck holding cuspidor firmly, mouth down, for drainage. The vessel dries very quickly by evaporation owing to heat imparted to cuspidor by the boiling water.

The rubber hose at the point marked Q is utilized for flushing the trough after the cuspidors have been cleansed and for freeing the bottom of the trough from tobacco quids, débris, etc., and such sediment as remains after water has been allowed to drain through the waste outlet to the sewer controlled by a valve; the short pipe (B) with wire tripod being removed to allow the trough to drain flush to belly of bottom. The hose (T) is used to "blow" or conduct live, streaming steam in sterilizing inside of empty trucks before reloading, previous to transmission back to floors.

The trough in the sterilizing chamber and the hose (T) are also utilized in washing and sterilizing garbage-cans, some forty-five in number, placed at various points on floors of building to receive litter, food débris, fruit-skins, etc., of the employés. The cans are specially made of heavy galvanized steel, 20 gauge, with tightly fitting covers and convex bottoms to permit easy cleaning, and otherwise so constructed that the base of each can is smaller than the top or mouth, which permits their nesting within each other to aid rapid collection and to save space upon flat truck that can be made to hold twenty in the manner described but only four if the cans did not permit nesting.

Each day, just after lunch, a cleaner starts at the top floor of the building with truck and drops from floor to floor by means of a freight elevator and collects the cans at the various points by wheeling the truck near their respective positions to expedite and permit easy handling.

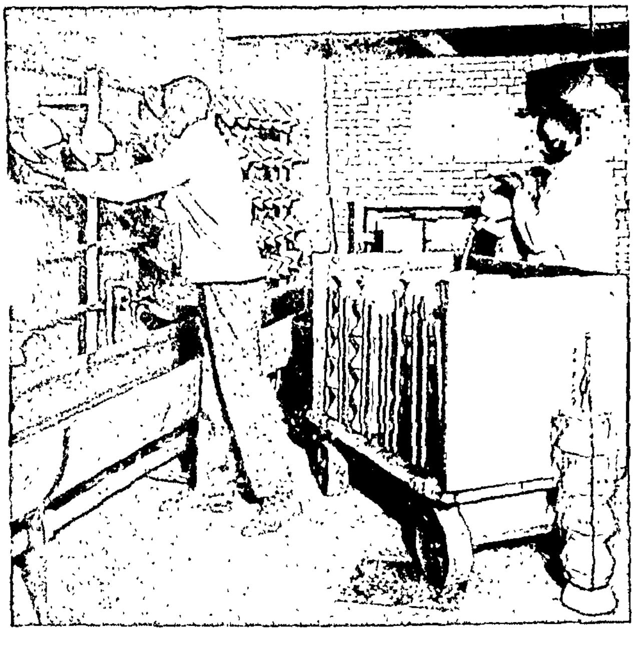

Fig. 5.—Method of placing solution in cuspidors and reloading trucks.

The cans are then roughly cleaned by being wheeled to and the contents being emptied into the crematory, again "nested," and taken to the trough in the sterilizing chamber, where they are immersed and washed in boiling water by means of a sawed-off mop-handle and floor mop, which I have found to be very practical for this purpose. Each can is then removed in turn from the trough and placed under the hose (T), which conducts live, streaming steam into each can by means of the manipulation of the hose by the cleaner. The cans are then nested again and removed back to floors. This method leaves a can cleanly and without disagreeable odor.

The cans are numbered consecutively and lettered for respective floors in red lead paint that withstands obliteration from the action of boiling water and repeated washings.

The floor of the room is composed of cement, graded toward the center, at which point is placed a cesspool trap, which permits rapid self-drainage and drying after the floor is flushed with hose (Q), and which is connected with sewer, thus insuring neatness and cleanly conditions.

Fourteen hundred cuspidors of the pattern shown in Figure 1 are washed and sterilized in the manner hereinbefore described at the termination of each working shift of eight hours.

Many of the employés use tobacco, which excites salivation, and their duties are of a sedentary nature and within a comparatively small one of floor space, which explains the great number of receptacles required.

Previous to the introduction of this method, about one year ago, sawdust spit-boxes were used, but they were insanitary and very dirty from the fact of the sputum collecting or "caking" on the sides, and the cleaning was very difficult, dangerous, and inefficient. Some idea of the magnitude of this work may be gained when the fact is stated that under the old system 400 barrels of sawdust were used each month, at a total cost of $100, to receive the sputum in the boxes.

The system appears to have its educational features along hygienic lines also, and, aside from promoting the health of employés, teaches, by practical illustration, a lesson in hygiene as to the care taken and of the danger of contact that must of necessity leave its impress on those observing its work, for it will be noticed that with the exception of the period during which the cleaner plucks the sterile vessel from the rack for purposes of reloading, as already described (Figure 5), the whole procedure from beginning to end is accomplished without digital contact. The educational feature mentioned was always before me while evolving the system, and served, in a measure, as a stimulus.

While, of course, the conditions shown by pictures of the sterilizing chamber are almost ideal, as befits a great government institution, yet without a special room a splendid substitute can be obtained in the corner of any basement in factory buildings, hotels and public buildings elsewhere in the United States at the cost of a few dollars, for it will be noted that the fittings and equipment are very simple.

It will give me great pleasure to answer any question pertaining to further details in reply to those persons who might be interested, after reading this article, in fitting up similar systems in their own factories, workshops, and public buildings by their own plumbers and steam-fitters, and I have given considerable space to complete details with that object in view.

While at the onset there were many prejudices and opposition to things new and which had to be overcome when I first broached and explained the method, yet by the special gold medal awarded this bureau for the exhibit of sanitary cuspidors, devices, and methods at the International Congress on Tuberculosis I have been amply and fully repaid for any thought, work, or experiment given on my part as concerns the system.

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Abuse of Heart Tonics in Valvular Lesions.—J. V. Montenegro of Madrid publishes an article in the *Siglo Medico*, May 8, 1909, laying down the principle that iron should be given in valvular lesions of endocarditic origin and iodid when they are due to arteriosclerosis. Many treat them all alike, however, giving digitalis at once, without stopping to analyze the cause of the disturbances. He urges the general practitioner to beware of such abuse of heart tonics, advising him to use iron or potassium iodid according to the above indications while studying the case further, and to give the digitalis intelligently if at all.

THE SURGICAL TREATMENT OF CERTAIN DEFORMITIES OF THE JAW ASSOCIATED WITH MALOCCLUSION OF THE TEETH*

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With the development in orthodontic practice it is surprising that so little advance has been made in the surgical treatment of prognathism, receding maxilla and other marked deformities of the jaw producing malocclusion. In the main the text-books on oral surgery contain no reference to the subject and little is to be found in modern treatises of surgery. In Von Bergmann's elaborate "System of Surgery," however, four lines relate that in a successful attempt to improve the deformity of a receding chin, Von Bergmann made an extensive resection of all of the processes, including the coronoid process, and subsequently displaced the entire jaw by the aid of an artificial dental apparatus.

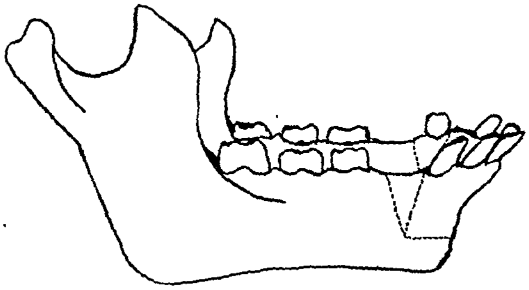

Fig. 1.—Diagram showing the osteoplastic resection of the lower jaw performed by Hullihen, July 12, 1848. The dotted lines indicate the lines of bone division with the saw. The triangular sections were removed from each side and the mobilized anterior segment of the jaw tilted back into occlusion.

HISTORY OF THE SUBJECT

Over sixty years have lapsed since Dr. S. P. Hullihen,[1] of Wheeling, Ga., successfully devised and performed an osteoplastic resection of the jaw, yet the modern works on dental practice and orthodontia mention but a single operation, and that similar in principle to this one of antebellum days. Dr. Hullihen's patient, a girl of 20, had an eversion of the lower lip with elongation of the lower jaw and protrusion of the process and lower incisors from the constant traction of a scar from a burn of the neck received fifteen years previous. Although an unsuccessful attempt to improve the condition had been made by two surgeons in New York City, Hullihen, without anesthetics, at a time when hemostatic forceps and antiseptics were unknown, boldly resected V-shaped sections from each side of the jaw, the section on the left side including the bicuspid. The V-shaped sections extended two-thirds of the way, through the bone, the apices being below. From the apices of the incisions the saw was turned horizontally forward, completing the section and leaving the upper two-thirds of the anterior portion of the mandible attached to the soft tissues only (Fig. 1). The removal of the V-shaped sections of bone permitted this loosened portion of the jaw to be pushed back, securing occlusion with the upper teeth (Fig. 2). From an impression taken in soft wax a silver plate was struck up which when applied held the section of the jaw in proper position. After this operation the tissues rapidly healed and Hullihen later transplanted a large flap of skin from the shoulder and upper arm to the neck to enable the head to be raised, and finally, by two further operations, corrected the eversion and deformity of the lower lip. Although these extensive operations were successful, nearly fifty years elapsed before a second bilateral resection to improve a

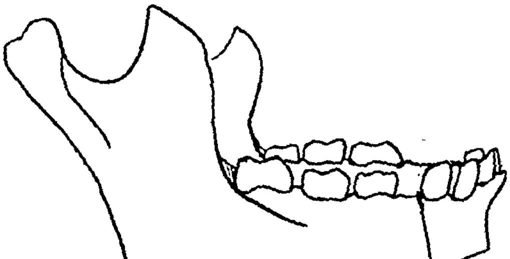

Fig. 2.—Diagram illustrating how the mobilized anterior segment was tilted back into occlusion in Hullihen's operation. This segment was held in position by a silver interdental splint. The nutrition of the separated portion of the jaw was maintained through its attachment to the lip. Similar types of operation are applicable to the upper jaw.

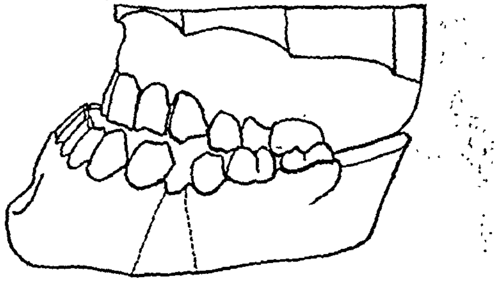

Fig. 3.—Diagram showing bilateral resection of the lower jaw advocated by Angle. A segment equal to that between the dotted lines is to be removed from each side of the jaw permitting the anterior part of the jaw to be brought into occlusion. The shape of the segments removed is to be modified by the conditions present in the particular case. Blair removed quadrilateral segments.

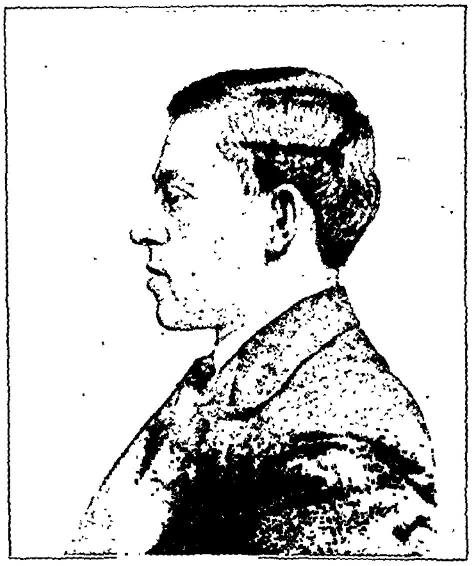

Fig. 4.—S. K., previous to operation, showing profile the result of inferior prognathism and malocclusion.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Hullihen, S. P.: Case of Elongation of the Jaw and Distortion of the Face and Neck Caused by a Burn Successfully Treated, Am. Jour. Dent. Sc., 1849, p. 157.

deformed jaw was undertaken. The patient, a young man with a progresssive type of prognathism, under the care of Dr. James W. Whipple, of St. Louis,[2] was referred to Dr. Edward H. Angle, who suggested a bilateral resection of the elongated portions of jaw between the first molar and second bicuspid on the right side and the first and second bicuspid on the left. A year later, in 1897, Dr. V. P. Blair performed this operation through angular incisions below the jaw. Despite imperfect retentive appliances, making it difficult to hold the fragments in proper position and the infection of the wounds, the patient, after nine very troublesome weeks, finally obtained bony union and marked improvement. Dr. Angle[3] in 1898 reviewed this operation and emphasized the importance of removing V-shaped or wedge-shaped sections of bone (Fig. 3) and of previously preparing from models accurate vulcanite or metal splints to hold the fragments in proper position. In these cases, Dr. Angle writes, "any orthodontic procedure is powerless to render improvement and the double resection becomes the only resort." The same operation was independently advocated in 1896 by Dr. R. Ottolengui,[4] to whom the idea was suggested, by observing a resection of the lower jaw for cancer. Since the time of Blair's operation double resection of the jaw has been performed but few times, and this apparently important subject has not been further developed by the orthodontist, while the surgeon, although interested in resections of the jaw for necrosis, tumor or ankylosis, apparently has not realized the field for surgical measures for deformities beyond the range of the usual orthodontic practice.

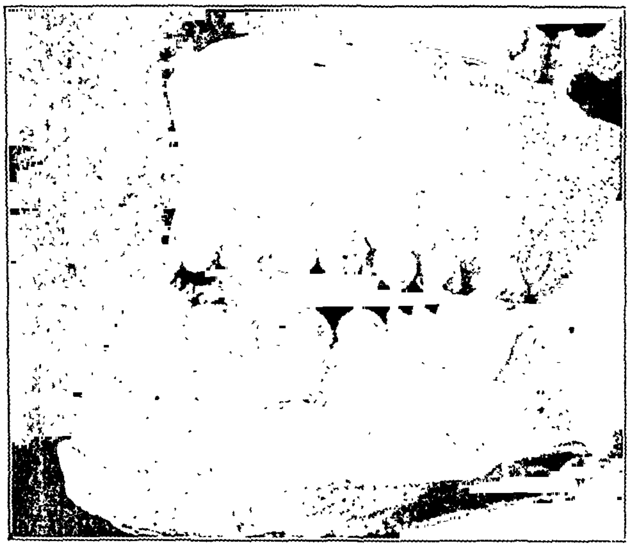

Fig 5.—Model showing malocclusion in the case of S. K., left side.

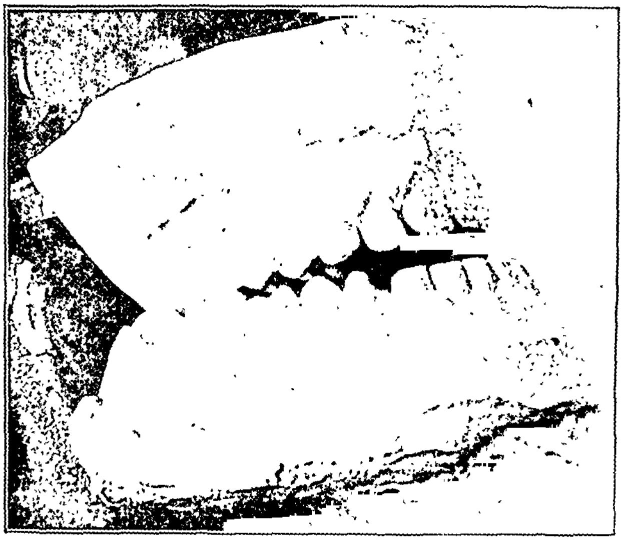

Fig. 6.—Model showing malocclusion in the case of S. K., right side.

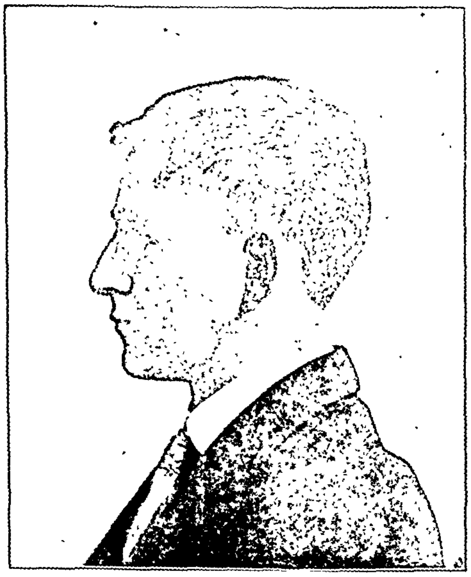

Fig. 7.—S. K., four months after section of both rami, showing change in profile. The scar from the incision is shown.

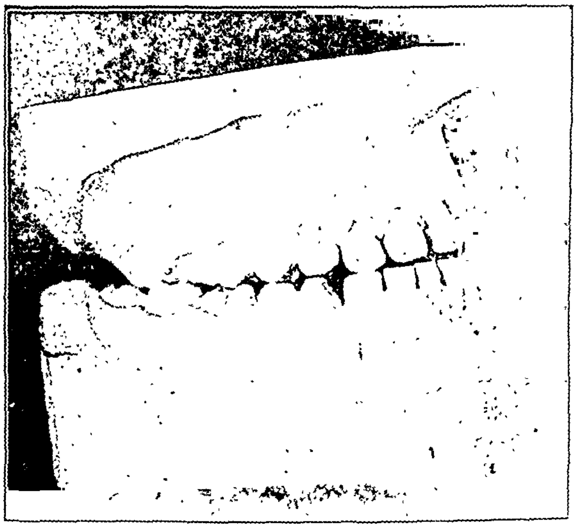

Fig. 8.—Model showing occlusion in the case of S. K., four months after operation.

REPORT OF CASE

My attention was attracted to this subject by observing a patient whose history is as follows:

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[2] Double Resection of the Inferior Maxilla for Protruding Lower Jaw, Dental Cosmos, 1898, p. 552.

[3] Double Resection of the Lower Maxilla, Dental Cosmos, 1898, p. 635; see also, Bellin: Items of Interest, June, 1908, p. 422; Blair: Items of Interest, November, 1908, p. 829.

[4] Discussion, Union Convention, Rochester, New York, Dental Cosmos, 1897, p. 143; Fowler: Items of Interest, January, 1897.

Patient.—Samuel K., aged 18, family history negative. No serious disease of childhood was recalled. During the past two winters he had had recurrent attacks of tonsillitis, but apart from this and a slight cold, he has had no illness for ten years.

Examination.—The tonsils were large; there was a moderate increase of adenoid tissue in the nasal pharynx; the nasal septum was inclined slightly to the right, and there was a chronic rhinitis of the hypertrophic type. The patient breathed almost exclusively through the mouth; the palate was highly arched, the dental arches were symmetrical and the teeth fairly regular, although small, short and poorly developed. Only the third molars on the left and the second and third on the right side could be occluded, the minimal separation between the upper and lower central incisors being 7 mm., and the lower centrals being in a plane at least 5 mm. in front of the upper centrals. The chin was rather pointed and prominent, and the patient said that, although the teeth were probably never in good occlusion, the condition had progressively increased during the past four years. The lips were long and the teeth did not show in ordinary conversation, so that the patient had been repeatedly asked if the teeth had been lost. In smiling and in talking the lips tended to curl in over the teeth, producing an unpleasant expression. In talking the tip of the tongue rested against the lower lip instead of the teeth so that enunciation had a mumbling character resembling that of an edentulous person. The patient could not bite hard or thin masses of food except by introducing them far into the mouth. Mastication was very imperfect, the food being bolted after a slight attempt at mastication. The lips were kept almost constantly open except during speech (Fig. 4). The patient was moderately well developed, but the chest was long and narrow. He was constipated but did not complain of indigestion.

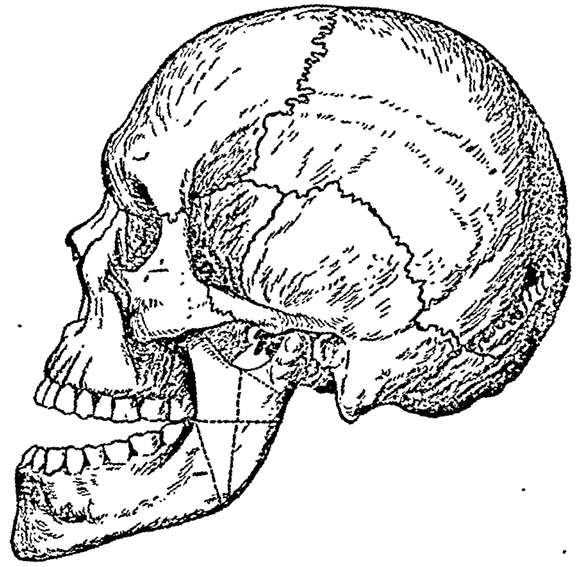

Fig. 9.—Diagram showing a condition of malocclusion, the dotted lines indicating various directions in which the ramus may be divided in order to overcome the deformity.

Choice of Measures of Relief.—The young man had presented himself for acne vulgaris, but the ugliness of the facial profile led me to examine the jaw and then to consider the possibility of surgical relief. At once it occurred to me that a section of both rami would be the operation of choice, but on investigation, to my surprise, I found no evidence that such an operation had ever been done previously. The patient was referred to Dr. S. H. Guilford to make sure that relief could not be obtained by any form of dental appliance. Dr. Guilford agreed as to the necessity for surgical intervention and suggested the operation of Angle. This operation seemed to me objectionable for the following reasons:

1. It would necessitate two compound fractures of the lower jaw.

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3. The inferior dental canal with its vessels and nerves would be divided on each side.

4. The arch of the lower jaw would be broken into three portions, would be contracted and would require a special retentive appliance.

5. As the surface of bone would be exposed to the action of saliva and to infection in the mouth a greater or lesser degree of necrosis would be almost inevitable.

In one instance this operation was followed by loss of the mandible from necrosis.

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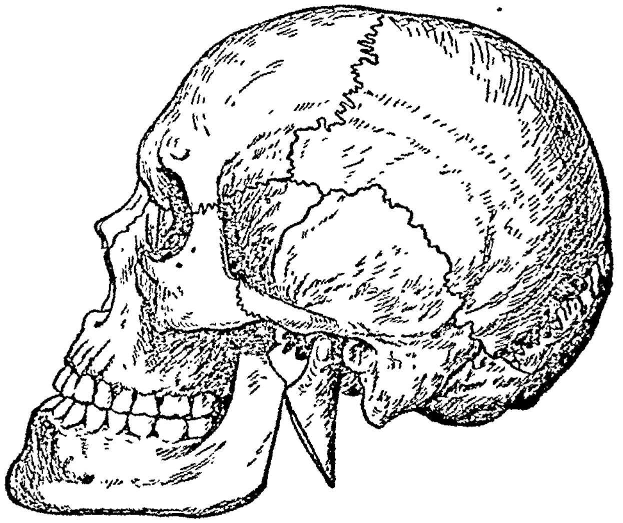

Fig. 10.—Result of a vertical division of the ramus. This line of section interferes with the leverage of the temporal muscle by approximating the coronoid and condyloid processes and tends to cause a marked posterior displacement of the lower part of the smaller fragment.

As an objection to a section of both rami, my attention was called to the narrow antero-posterior diameter of the pharynx, and the danger of producing suffocation by carrying the lower jaw and the attached tongue backward. As the support of the hyoid bone would not be changed by the operation, and as it seemed to be quite feasible to reproduce the deformity should signs of suffocation follow from the procedure, the following operation was undertaken:

Operation.—The patient was narcotized by scopolamin-morphin reinforced by a small amount of ether, Dec. 5, 1908, and an incision carried through the skin and subcutaneous tissue over the posterior border of the ramus of the jaw from the zygoma to a point under and anterior to the angle of the jaw. This incision was not carried through the deeper tissues for fear of injuring branches of the facial nerve and parotid duct. The outer fibers of the masseter muscle were separated and the external surface of the middle of the ramus exposed. With a small chisel a transverse section was then made through the deformed jaw was undertaken. The patient, a young man with a progresssive type of prognathism, under the care of Dr. James W. Whipple, of St. Louis,[2] was referred to Dr. Edward H. Angle, who suggested a bilateral resection of the elongated portions of jaw between the first molar and second bicuspid on the right side and the first and second bicuspid on the left. A year later, in 1897, Dr. V. P. Blair performed this operation through angular incisions below the jaw. Despite imperfect retentive appliances, making it difficult to hold the fragments in proper position and the infection of the wounds, the patient, after nine very troublesome weeks, finally obtained bony union and marked improvement. Dr. Angle[3] in 1898 reviewed this operation and emphasized the importance of removing V-shaped or wedge-shaped sections of bone (Fig. 3) and of previously preparing from models accurate vulcanite or metal splints to hold the fragments in proper position. In these cases, Dr. Angle writes, "any orthodontic procedure is powerless to render improvement and the double resection becomes the only resort." The same operation was independently advocated in 1896 by Dr. R. Ottolengui,[4] to whom the idea was suggested, by observing a resection of the lower jaw for cancer. Since the time of Blair's operation double resection of the jaw has been performed but few times, and this apparently important subject has not been further developed by the orthodontist, while the surgeon, although interested in resections of the jaw for necrosis, tumor or ankylosis, apparently has not realized the field for surgical measures for deformities beyond the range of the usual orthodontic practice.

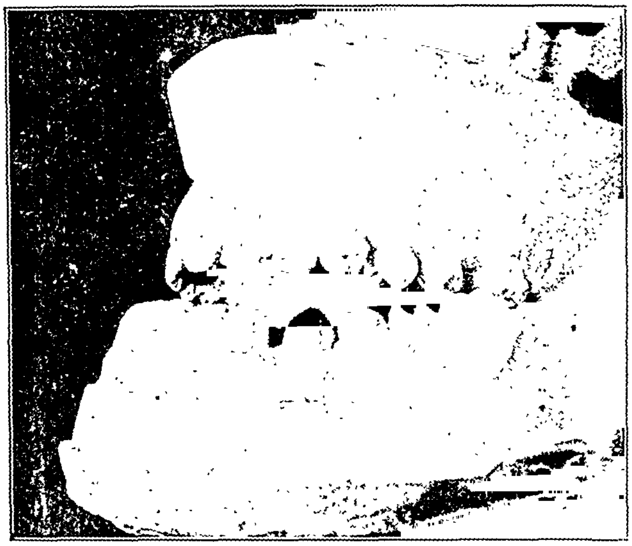

Fig 5.—Model showing malocclusion in the case of S. K., left side.

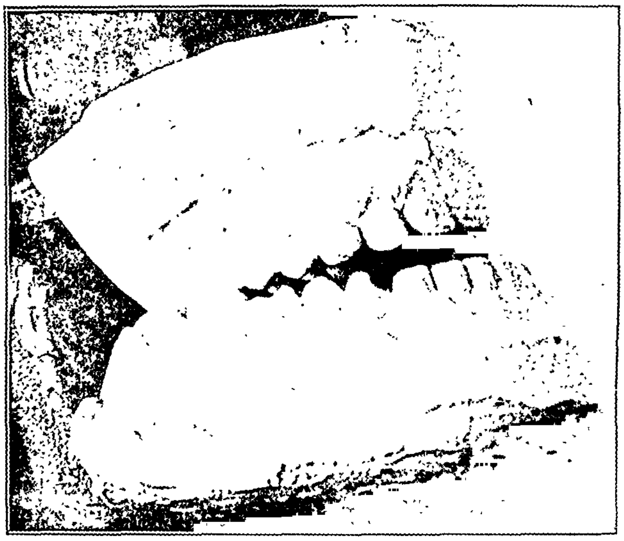

Fig. 6.—Model showing malocclusion in the case of S. K., right side.

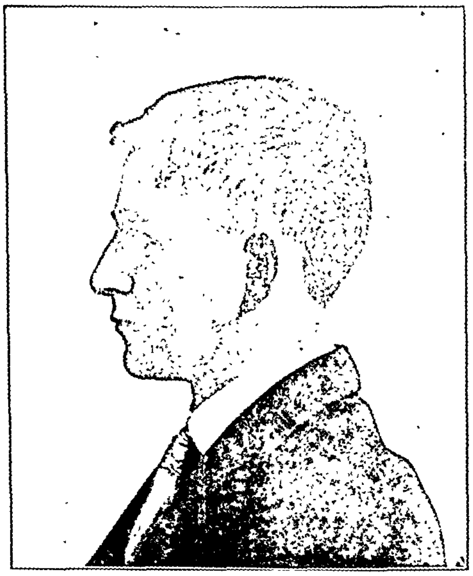

Fig. 7.—S. K., four months after section of both rami, showing change in profile. The scar from the incision is shown.

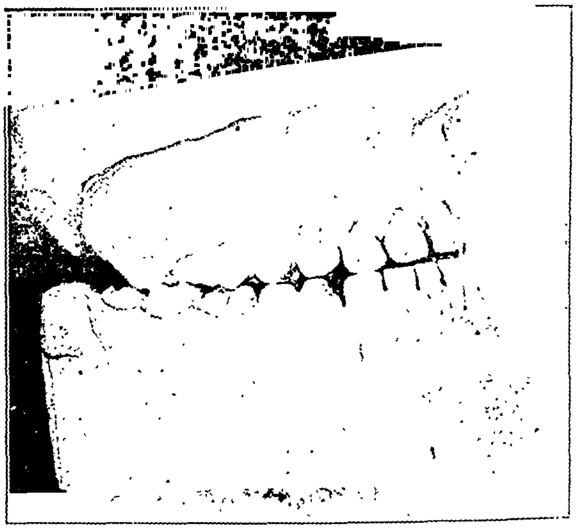

Fig. 8.—Model showing occlusion in the case of S. K., four months after operation.

REPORT OF CASE

My attention was attracted to this subject by observing a patient whose history is as follows:

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[2] Double Resection of the Inferior Maxilla for Protruding Lower Jaw, Dental Cosmos, 1898, p. 552.

[3] Double Resection of the Lower Maxilla, Dental Cosmos, 1898, p. 635; see also, Bellin: Items of Interest, June, 1908, p. 422; Blair: Items of Interest, November, 1908, p. 829.

[4] Discussion, Union Convention, Rochester, New York, Dental Cosmos, 1897, p. 143; Fowler: Items of Interest, January, 1897.

Patient.—Samuel K., aged 18, family history negative. No serious disease of childhood was recalled. During the past two winters he had had recurrent attacks of tonsillitis, but apart from this and a slight cold, he has had no illness for ten years.

Examination.—The tonsils were large; there was a moderate increase of adenoid tissue in the nasal pharynx; the nasal septum was inclined slightly to the right, and there was a chronic rhinitis of the hypertrophic type. The patient breathed almost exclusively through the mouth; the palate was highly arched, the dental arches were symmetrical and the teeth fairly regular, although small, short and poorly developed. Only the third molars on the left and the second and third on the right side could be occluded, the minimal separation between the upper and lower central incisors being 7 mm., and the lower centrals being in a plane at least 5 mm. in front of the upper centrals. The chin was rather pointed and prominent, and the patient said that, although the teeth were probably never in good occlusion, the condition had progressively increased during the past four years. The lips were long and the teeth did not show in ordinary conversation, so that the patient had been repeatedly asked if the teeth had been lost. In smiling and in talking the lips tended to curl in over the teeth, producing an unpleasant expression. In talking the tip of the tongue rested against the lower lip instead of the teeth so that enunciation had a mumbling character resembling that of an edentulous person. The patient could not bite hard or thin masses of food except by introducing them far into the mouth. Mastication was very imperfect, the food being bolted after a slight attempt at mastication. The lips were kept almost constantly open except during speech (Fig. 4). The patient was moderately well developed, but the chest was long and narrow. He was constipated but did not complain of indigestion.

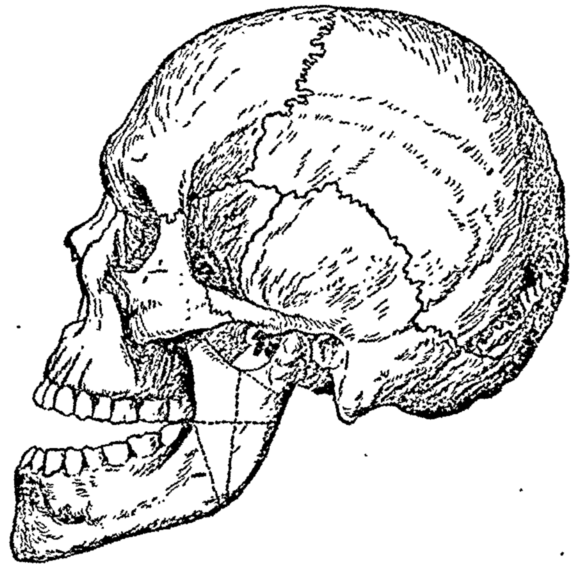

Fig. 9.—Diagram showing a condition of malocclusion, the dotted lines indicating various directions in which the ramus may be divided in order to overcome the deformity.

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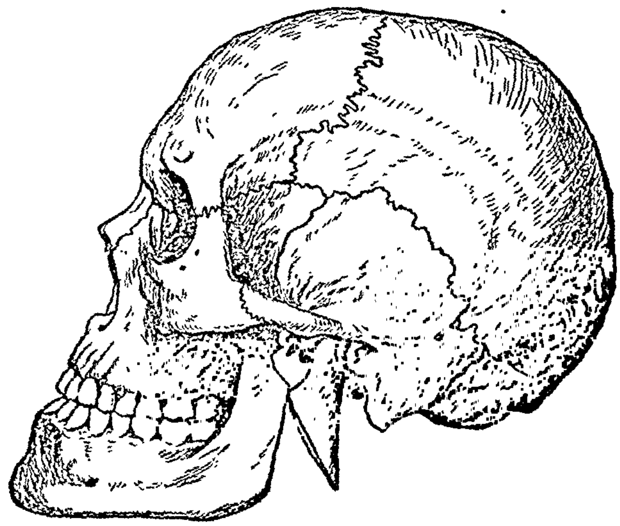

Fig. 10.—Result of a vertical division of the ramus. This line of section interferes with the leverage of the temporal muscle by approximating the coronoid and condyloid processes and tends to cause a marked posterior displacement of the lower part of the smaller fragment.

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Postoperative History.—In the after course of the case it was found that the contraction of the masseter muscles and the depressors of the jaw, by closing the triangular gap in the ramus, tended to separate the jaws anteriorly and the wiring of the teeth was found to be insufficient and was discarded. Through Dr. Guilford an interdental splint was constructed, but this likewise was not found of much advantage, so that recourse was had to pressure of an ordinary aluminum chin-cup connected by elastic bands to a head-piece. By regulating the tension of the bands it was found possible to bring the teeth into occlusion. This appliance was worn about nine weeks to give sufficient time for the new bony tissue to fill the gaps in the rami, but two weeks or more before the appliance was removed the patient began voluntarily to separate and to use the jaws. There was no tendency to ankylosis and the lateral and vertical movements of the jaw were well retained. As a result of the operation the patient's appearance has been greatly improved (Fig. 7), the lips have become shorter, the chin less prominent, the mouth is kept constantly closed, the enunciation of words is better, nasal respiration has been spontaneously established, food is properly masticated, the tongue is no longer kept between the teeth, the chronic constipation has disappeared, and, possibly as a result of the operation, or the cessation of mouth-breathing, there has been no attack of tonsillitis this winter, although the tonsils remain enlarged and the nasal catarrh continues.

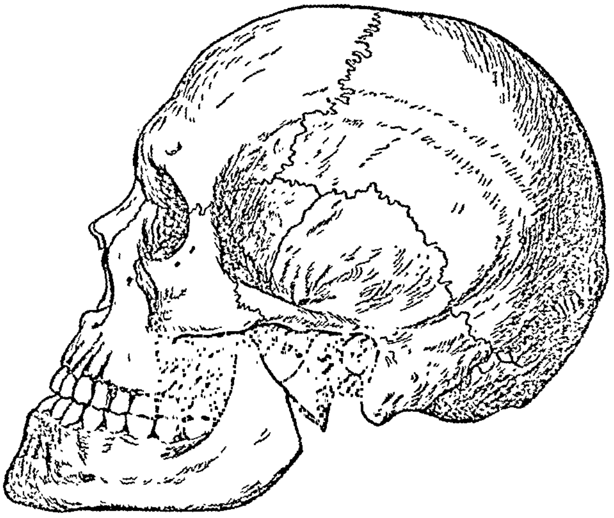

Fig. 11 Result of correcting the deformity by a section through the base of the condyloid process. This line of section reduces the leverage of the temporal muscle, and from lack of fixation of the smaller fragment would seem to involve a greater tendency to pseudarthrosis than certain other lines of section.

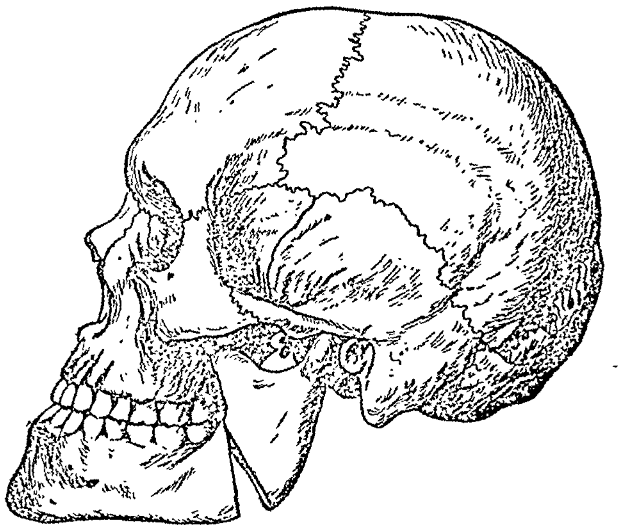

Fig. 12.—Results of a section between the ramus and the body of the jaw. The inferior dental canal is divided, the angle of the jaw increased, and the section is not so well adapted for the correction for prognathism. For lateral displacements of the jaw, this line of division, made on the side of the displacement may be useful.

For those who consider enlarged tonsils, adenoids and nasal obstruction a cause of mouth-breathing and of faulty development of the jaws, we have here some suggestive evidence that the correction of deformities of the jaw may conversely at times be followed by the spontaneous disappearance of the nasal obstruction and by failure of the large tonsils to produce symptoms. By this I would not controvert accepted theories, but would suggest the thought that mouth-breathing and oral deformities may at times be the primary and enlarged tonsils, adenoids and nasal obstructions secondary conditions.

METHOD OF DIVIDING THE RAMUS

In determining the best direction for the line of section to be made through the *ramus* in the above case a series of interesting observations shown in the accompanying diagrams were made (Fig. 9). By a vertical section through the ramus (Fig. 10) the lower portion of the posterior fragment is pushed far back, leaving a large V-shaped gap with the apex above. The angle of the jaw is, therefore, carried much farther back than normal, while the distance between the coronoid and condyloid process is much decreased, reducing the leverage of the temporal muscle. In those conditions in which the mandible is not undershot but in which it is merely desirable to approximate the anterior teeth such a line of section might be worthy of consideration.

A section through the base of the condyloid process, as shown in Figure 11, produces less deformity but also reduces the distance between the condyloid and coronoid processes. The small size of the posterior fragment and the lack of extensive muscular attachment might favor the production of a false joint after such an operation.

An oblique section running from above, downward and backward through the lower part of the ramus, as shown in Figure 12, leaves the bulk of the ramus intact and produces a moderate grade of deformity. A section of this type, or one more nearly vertical, could be employed for lateral deviations of the mandible, the line of section, of course, to be made on the side toward which the jaw deviated, as the separation of the fragments by a wedge would cause the jaw to be carried to the opposite direction correcting the deformity.

In Figure 13 is shown the result of correcting the deformity by a transverse section of the ramus on a line approximating the masticating surfaces of the teeth. As this line of section gave the least secondary deformity and as both fragments are well fixed by muscular attachments, this line was the line of section decided on in the present case. The strong masseter muscle splints the two sections and binds them firmly together. Indeed, the pull of the masseter muscle by tending to close the gap in the ramus so strongly tends to tilt the chin downward that a firm counter-support is necessary.

To obviate this we have now devised wedges of ivory or magnesium to be slipped between the separated portions of the ramus (Fig. 14), so as to put the posterior fibers of the masseter muscle on the stretch and to tilt the chin upward. In this way the chief difficulty in the after-treatment, the tendency of the chin to drop, is overcome. The wedges are very much the shape of an ordinary collar-button, the extended flange at each side tending to prevent displacement. To provide for the varying thickness of different rami I have had the wedge constructed like a small bolt, the thin flat head of the bolt being approximated to the inner surface of the ramus of the jaw, and an outer flat nut being screwed down, holding the parts firmly in apposition. Ivory and magnesium are the substances selected for the appliances, as each is susceptible to sterilization, and to absorption when buried in the tissues.

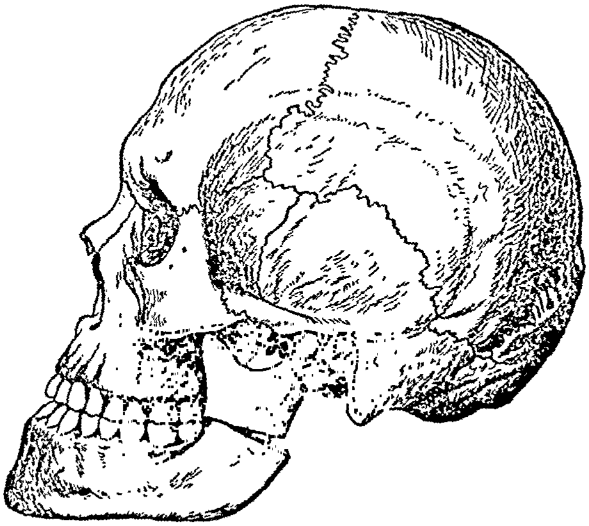

Fig. 13.—Transverse line of ramus division selected in the case of S. K. This line of section produces the least deformity, and if placed above the level of the *spine of Spix* enables one to avoid injury to the contents of the inferior dental canal and, moreover, does not interfere with the normal leverage of the temporal muscle. Both fragments have extensive muscular attachments serving to splint the parts after operation. The dotted line indicates the outer plate of the wedge of ivory or magnesium suggested by the author to maintain the elongation of the ramus, and to overcome the traction of the masseter muscle.

The section may be carried out by means of a small chisel, a burr actuated by a surgical engine, or the spiral osteotome of Cryer. The chisel has the advantage of the fact that it may be manipulated through a very small incision and with very little exposure of the bone. A vertical incision one inch long placed in front of the ear will enable one experienced in the use of the chisel to make the required section. Indeed, a narrow chisel may even be carried through the skin through a mere puncture and the bone division accomplished by the sense of touch alone. The section may likewise be carried out from the inside of the mouth with no external incision. The mouth is widely opened, a vertical incision made over the anterior border of the ramus through the mouth, as in Paravicini's operation, the tissues separated from the inner surface of the ramus, care being taken to avoid the internal lateral ligament, and, guided by the finger introduced through the incision, the bone divided by means of an appropriate burr or chisel.

There is some danger of necrosis of the ramus from infection from the mouth after such an operation. In a number of instances, however, in which I have exposed the inner surface of the ramus in this manner and have injected solutions of osmic acid into the inferior dental nerve, no troublesome necrosis has resulted despite the contact of the bone with saliva and an irritating chemical solution.

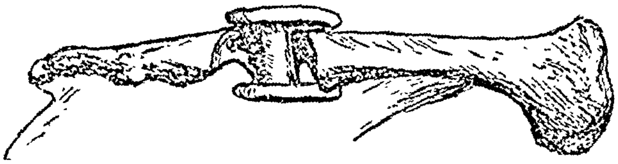

Fig. 14.—Wedge introduced into the line of section, viewed from behind. The introduction of this wedge overcomes the tendency of the anterior part of the jaw to tilt downward.

Besides necrosis a disadvantage in this method, however, is that an accurate approximation and support of the fragments by wedges can not be obtained and recourse must be had to interdental splints or the use of the chin-cup until the bone be united and the gap filled. Of course, in most instances, interdental splints firmly applied previous to the operation, to be later wired or bolted together, afford the best method of retention.

In considering the operative treatment of a deformity of the jaws one should not limit himself to the consideration of a single operation but should, until further advances have been made, consider the following possibilities:

1. By surgical measures it is possible (a) to change the relation between the body of the lower jaw and the rami so as to produce protrusion, recession, tilting or lateral displacement of the body of the jaw upon the ramus; (b) to change the shape of the arch of the jaw, either increasing or decreasing the size of the arch or altering its form; (c) to change the relative position of an anterior section of the jaw as related with a posterior section of the body and ramus; (d) to transplant and change the position of segments of the alveolus with contained teeth, the arch of the jaw not being completely divided, nutrition being maintained by the preservation of attachments to the soft tissues.

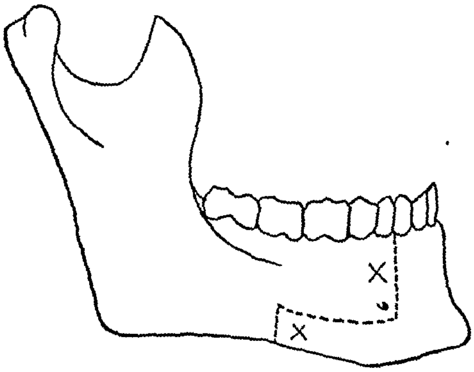

Fig. 15.—Diagram showing line of section suggested to enlarge the arch of the jaw. After the mandible has been divided as indicated by the dotted lines the segments are separated sufficiently to secure the proper occlusion and are maintained in position during the process of healing by an appropriate interdental splint or other appliance. By resecting the segments of bone indicated by XX the same line of section may be used to diminish the size of the arch of the jaw. By placing the incision anteriorly, the arch may be widened; by placing the line of section laterally one or both sides may be lengthened as desired.

2. When it is found by a study of models in the particular case that a correction of the deformity and a fair occlusion may be obtained without dividing the dental arch, the preferred operation is the section of one or

both rami along the lines found to be best adapted to the particular case. This operation is useful for many cases of prognathism, receding chin, and certain lateral deviations of the jaw. In certain instances, as in hypoplasia, it may be necessary to combine it with other operations designed to increase the size of the arch.

3. Where it is desired to enlarge the dental arch I would suggest the operation indicated in Figure 15. In this operation a vertical section of the alveolus is carried two-thirds of the way through the jaw, the line section is then carried at right angles for a variable distance and the remaining third of the jaw then divided parallel to but in a different plane from the first vertical section. The arch is then to be opened by sliding the segments of the jaw on each other and fixation in the proper position secured by adjusting an appropriate interdental splint or other appliance which previously has been prepared. By doing this operation on the anterior part of the jaw the arch may be widened, and if placed laterally one or both sides of the arch may be lengthened. With a resection of the divided bone ends, this operation may likewise be used to reduce the arch at any point, or the arch may be reduced by a simple resection of a V-shaped or wedge-shaped section of bone as may be found desirable.

4. To change the plane of occlusion of only a segment of the jaw, a bilateral V-shaped or wedge-shaped resection after the method of Angle may be used or an osteoplastic section after the plan of Hullihen.

5. Somewhat similar operations are to a lesser degree available for the deformities of the upper jaw. Kocher has shown that a transverse supra-alveolar resection on the superior maxilla is feasible, and as this operation may be used to mobilize one-half or the entire dental arch, it is obvious that it will enable decided changes in position for the correction of deformity. The separation of the superior maxilla in the mid-line or a plastic displacement of a portion of the alveolus with the contained teeth is likewise feasible. Unfortunately most of these operations are more difficult and attended with more serious hemorrhage and other complications than the operations on the lower jaw. The fixation of the mobilized portions of jaw after these operations, however, involves less difficulties than in the case of the mandible.

The above operations are briefly mentioned to indicate the surgical procedures which may be employed for the correction of deformities when the less serious orthodontic measures are unavailing and to stimulate the development of this field. A consideration of forms of malocclusion resulting from the diseases of the temporomaxillary articulation and malformation of the bone which interfere with the normal movements of the jaw is considered beyond the scope of the present paper.

2033 Walnut Street.

ABSTRACT OF DISCUSSION

Dr. J. E. Nyman, Chicago: I think that the successful operation reported presents a solution of the distressing conditions which are so frequently brought to our attention, and for which orthodontia can do little or nothing, and that is unilateral hypertrophy of the jaw between the shaft and the ramus. I have had three cases of unilateral hypertrophy in a practice of about fifteen years. Unfortunately I could suggest no operation which bade fair to produce favorable results. It seems to me that this operation will be of especial service in unilateral hypertrophy.

I think that frequently the fact that there is delayed union along the lines of section where a saw or burr has been used, is not so much because heat has been developed, but because of the fact that innumerable spicules of bone have been left which act as foreign bodies which must be absorbed or thrown off before regeneration and formation of new tissue can take place.

Dr. George V. I. Brown, Milwaukee: Dr. Babcock's paper is a beautiful exposition of his subject and of the method of his operation. The result is phenomenal. I did not believe such a result could be secured and have hitherto felt it safer to cut off the entire anterior portion of the jaw and have some dentist put in bridge work to complete the case, as was done in one of my cases in which the jaw extended so far forward as to make this possible. In another case the jaw was too short and we gave prominence to the chin, yet both resulted from burns.

I have looked with a good deal of skepticism on operations that have been described and recommended from time to time for patients requiring removal of sections of the jaw as described by Dr. Babcock, but his description is so complete and the result so perfect, that I see the promise of great good results in the future.

Dr. S. L. McCurdy, Pittsburg, Pa.: In a case similar to this which came to me a few months ago there was much separation of the incisors. The molars came together and there appeared to be a projection. I decided as the easiest and best operation to extract the lower molars and then chisel away the alveolar process as far as necessary, so that when the mouth was closed the incisors came in contact; the upper molars did not come in contact with the place where the lower molars had been extracted, and after that I removed two teeth, one on each side. Later the dentist made an appliance which increased the number of teeth which could be used for mastication, and the result was satisfactory; not, however, so satisfactory as that obtained by Dr. Babcock, and I think this will be the operation selected in the future.

Dr. A. R. Dray, Philadelphia: I feel indebted to Dr. Babcock for demonstrating his operation for the cure of a condition which hitherto has baffled the best efforts of the orthodontist and the dental surgeon. I did not exactly catch how Dr. Babcock immobilized the lower jaw while union was taking place. He referred briefly to an interdental splint, a poor thing at best. In case of ordinary fracture I think he would be tempted to discard appliances placed beneath the chin in order to prevent mobility. Wiring together the teeth of opposing jaws I have found is a splendid way to maintain a fixed position for fractures, and the operation described by Dr. Babcock is of course for a fracture of the inferior maxilla.

Dr. S. L. McCurdy, Pittsburg, Pa.: I should like to place myself on record at this time in connection with the question of repair of bones. I have been practicing the wiring of long bones by allowing them to remain *in situ*, recognizing the fact that when a bone was disturbed at the point of fracture or when we had an ununited fracture which required wiring, if during the process of freshening the ends of the bones or sawing them off they were torn and dragged about, and the soft tissues attached to the ends of these bones torn loose and the peritoneum stripped, we could not expect to have repair of the bone. I make this statement because I have seen a number of these operations performed, and the general surgeon usually does a through and through wiring which requires a great deal of destruction of soft tissues. The soft tissues must be preserved about the field of operation or nutrition will be destroyed and exfoliation will result in addition to the fact that there will be no union.

In a paper I read in Boston recently I described an operation of wiring which did not include a complete through and through drill, but a wiring of just half the bone. With the notched drill one can pull the wires through from the central canal.

Dr. W. Babcock, Philadelphia: The advantage of the chisel is that it enables one to work through a very small opening, does very little injury to the adjacent bone, and at the same time forms a very linear incision. The operation may be done in a very simple way, similar to an osteotomy of a long bone, by puncturing the soft tissues and carrying the chisel to the bone, the division of which occurs under the sense of touch. It is possible, therefore, to make this line of section with practically no external disfigurement, and with little injury to the adjacent tissues. The objection which is raised to the chisel when used on the skull, the concussion of the brain, hardly holds when one deals with the mandible, since this bone is fairly insulated from the skull proper.

Regarding the great field of purely orthodontic methods, I would again emphasize the fact that the oral surgeon in this field of work should be the associate and assistant of the orthodontist, and he must depend on those skilled in orthodontia to tell him when operation is necessary. In this case, I felt it was not proper for me to operate without putting this patient in the hands of my dental colleague to see if something could be done without operation. Moreover, after the operation has been done, as in this case, there often will remain some residual deformity to be corrected by appliances. The surgeon hews out the rough structure and leaves the finishing touches to be worked out later by the dentist.

In answer to the other questions, I would say that I first wired the teeth and depended on a plaster bandage, but the tension pulled the wires from the teeth. The degree of the pull during the first days is amazing. The condition is one in which the surgeon is really lengthening the ramus, and the attached muscles contract to prevent this lengthening. The result is that one has at the long end of the lever a traction which requires firm retention, preferably a full interdental splint. In this case, after wasting two or three weeks with plaster bandages and other appliances, I depended entirely on a chin cup with strong traction by rubber bands. In the interval the jaw had slipped slightly forward and the bone had partly filled in and something of the original correction was lost. This was left on in all about nine weeks. During the last three the patient began to chew food and use his jaws. It has been said that there is a danger theoretically of death with this type of operation. I think the mortality will be extremely small, as there is no danger from the inhalation of septic material, as when the mucosa is incised.

The oral surgeon is very fortunate in that he deals with bones especially well supplied with nourishment. He can do more than can the general surgeon—he can produce more mutilation and get better final results than perhaps can be obtained in any other part of the body. Those of you who have seen the crushes of the bones of the face, and have seen how the fragments unite after being placed in position will realize this. The perfect immobilization of bone fragments in the treatment of fractures seems to reduce the amount of callus formation. Too much callus, on the other hand, might give deformity. Although there was some play in this case, not enough callus was thrown out to be disfiguring. The bones of the head as a rule produce very little callus.

It makes little difference what else one uses so long as the teeth are kept properly together there is very little tendency for the fragments to slide one way or the other, as they are immobilized by the muscles.

INFANTILE ECZEMA *

ISAAC A. ABT, M.D.
CHICAGO

Infantile eczema occupies an important place in the clinic of children's diseases, and frequently presents great difficulties in its management. The etiology and pathology of this affection are as yet but little understood, and knowledge concerning them is needed. Even the most distinguished pathologists are not agreed as to the entire clinical history of this morbid process, whether by infantile eczema we mean a definite disease or merely a symptom of some unknown process. It is the purpose of this paper to discuss briefly some of the more recent views expressed on this matter, and to present the clinical history of the affection.

ETIOLOGY

At the outset attention must be directed to the confusion which might arise through considering this form of eczema with other skin eruptions produced by irritation, such as that caused by dirt, perspiration, etc. The most rational view, based on clinical observation, would be to consider eczema an external manifestation of some internal disorder. Careful observation of these cases confirms a first impression that the lesion on the skin may be compared with a barometric index which fluctuates with the prevalence of internal storms. The skin lesion may have exhibited a tendency to disappear or at least to abate somewhat, though concomitantly with an attack, moderate or severe, of indigestion, or because of some error or indiscretion in diet, the disease reappears and spreads with great activity. In a word, it may be stated that true eczemas in children are dependent on constitutional disturbances. The presence of bacteria in the secretions or on the denuded surface may be the result of a secondary infection and should not be considered as positive evidence that there exists between these germs and the disease a causal relationship. Some of the older authors may be quoted in corroboration of this belief.

Henke[1] thought that eczema was due to overfeeding, both in quantity and quality. Jorg[2] noted that these eczemas occurred more frequently in well-fed, fat babies, and thought that overfeeding played an important part. Similarly, Bohn[3] thought that the disease was due to overfeeding and constipation. The French authors lay great stress on hereditary influences as causes of the disease. Thus, Comby[4] thinks that arthritis, eczema, gout, obesity, asthma and various neuropathic states in the parent tend to cause eczema in the offspring. That this view is based on facts is corroborated by every observer's clinical experience. In very many of these cases it is found that the family history shows distinctly evidences of gouty and arthritic states and allied conditions.

L. F. Meyer thought that overfeeding, especially of such organic foodstuffs as casein and fat, gave rise to an excessive elimination of salts in children. Leighton,[5] on the other hand, is convinced that eczema is frequently of neurotic origin, even in those cases in which some external irritant is active. He recognizes two forms of eczema, (1) the idiopathic or ganglionic form, originating along the tract of the sympathetic nerves, and (2) the peripheral or traumatic form.

Variot[6] asserts that well-developed children, especially, and breast-fed, as well as artificially nourished children, are attacked by the disease.

Gaucher found an inhibition of metabolism in every case of eczema, with an increase in the nitrogen extractives and the chlorids and a diminution in uric-acid excretion. He regards eczema as an autointoxication, the poisons being eliminated through the skin, and these poisons being the result of incomplete oxidation of the nitrogenous products.

Marfan[7] classifies these cases in two forms: The first form is characterized by the localization of the eczema on the scalp, the eruption being moist and crusty. Associated with the scalp eruption is a wet or crusty eruption on the cheeks and ears, the rest of the

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Henke: Handbuch für Kinderkrankheiten, 1809.
2. Jorg: Handbuch für Kinderkrankheiten, 1826.
3. Bohn: Jahrb. f. Kinderh., 1868.
4. Rev. mens. d. mal. de l'enfance, v, 521.
5. Leighton: Brit. Med. Jour., June 27, 1908.
6. Variot: Gaz. d. Hôp., Paris, 1906, p. 951.
7. Marfan: Semaine méd., 1894, p. 138.

face usually remaining free. This has been called milk-scab. Later in the course of the disease the eruption may spread to the hands and forearms, although, as a rule, the trunk and extremities are not affected. If the condition remains untreated or does not yield to treatment, the body, neck, arms and legs may be covered with a weeping, crusty eczema, while an intertriginous eruption covers the genitocrural folds. Dry fatty scales are usually found on the surface. Itching, as a rule, does not occur. This variety usually occurs in babies who have been fed artificially with large quantities of milk, eggs and meat broths. This form of the disease is most often of the seborrheic type, and, while the treatment is difficult, spontaneous recovery may occur at the end of the first year, when the quantity of milk is reduced.

The second form is described by Marfan under the name of disseminated, dry eczema. It occurs most frequently in artificially fed babies, and the history obtained is usually that of an overfed infant, who is thin and delicate, and who is suffering from chronic intestinal and nutritive disturbances, manifested by diarrhea, alternating with constipation, abdominal distention and loss of weight. The appearance of the skin is even worse than in the first form. There are dry, scaly, infiltrated islands of crusts with papular and pustular lesions, and sometimes moist areas. The face is usually most involved, the scalp only slightly. The eruption progresses slowly. The itching is very refractory to treatment. It has been suggested that this is the gouty form.

In some cases the first and second types merge into each other so much that no fixed or definite line can be drawn between the two varieties.

Among the complications of infantile eczema may be mentioned albuminuria, with or without kidney disease and heart involvement. Re[8] found albuminuria in twelve out of twenty-one cases, but these patients were also suffering from enteritis. The albuminuria and the heart complications are undoubtedly due to absorption of poisonous products, and many writers have
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Adipis lanæ hydrosi	4	or	ʒi
Liquoris calcis	30		fl.℥i
Olei amygdalæ expressi	4		fl.ʒi

M. et Sig.: Apply as directed.

In the milder cases a powder of zinc oxid, 30 per cent., and talcum, 70 per cent., acts well. Scratching is prevented by putting the arms in light splints. In the obstinate cases in which these measures do not seem sufficient, ointments of naphthalene (5 to 10 per cent.) for the itching, or sulphur (2 to 5 per cent.) in the seborrheic form, or salicylic acid (0.5 to 2 per cent.) in the dry disseminated type, may be employed.

When the moisture is no longer present, zinc oxid and olive-oil, equal parts of each, is often indicated. In the stubborn dry cases some tar ointment is often of service, as 0.1 to 1 per cent. oleum rusci or oleum cadini or a weakened tar oil, as unguentum picis of the National Formulary.

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8. Re; Pediatria, September, 1

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Langstein reports a case in which the Finklestein treatment failed absolutely. The patient finally recovered after the internal administration of large quantities of salt. Czerny emphasizes the necessity of treating any underlying hereditary factor which may have been operative in the production of the disease. The administration of thyroid extract has done well in some cases.

100 State Street.

ABSTRACT OF DISCUSSION

Dr. D. E. English, Summit, N. J.: In making ointments I use unhydrated lanolin and soften it with lard oil, and in that way use only the animal fats.

THE SERUM TREATMENT OF EPIDEMIC MENINGITIS *

FRANK SPOONER CHURCHILL, M.D.
Assistant Professor of Pediatrics, Rush Medical College
CHICAGO

The bacteriology of meningitis is most varied and the cases may be divided into two groups, the tuberculous and the non-tuberculous. The tuberculous cases are due to invasion of the meninges by the bacillus of tuberculosis, the non-tuberculous to invasion by a great variety of organisms. The great majority of the latter group consist of those cases due to the *Diplococcus intracellularis* of Weichselbaum, 80 per cent. of non-tuberculous cases being due to this organism. It is familiarly known as epidemic meningitis. For the treatment of this particular form of meningitis we have now had for about two years a specific serum evolved by Simon Flexner. It is with this type of meningitis, and this alone, that this paper deals. It is with this type of meningitis, and this alone, that the Flexner serum is effective. It is useless in all other forms. This statement seems necessary in view of the requests which have been made of me to use the serum in tuberculous meningitis, in non-tuberculous meningitis due to the pneumococcus, to the streptococcus, in head injuries, and in meningitis occurring in the course of the various infectious diseases and secondary to intestinal infections. The specific nature of the serum must be borne disinctly in mind. It will do no more good in a pneumococcic or streptococcic meningitis than will diphtheria antitoxin in a pneumococcic or streptococcic tonsillitis.

The development of the serum is interesting. Flexner, studying the New York epidemic of meningitis in 1894, sought to influence favorably the course of the disease produced experimentally in animals by antiserums prepared in several kinds of animals from *Diplococcus intracellularis.* His first reports showed that the course of the disease in guinea-pigs and monkeys could be modified favorably and animals saved from the fatal effects of the diplococcus.

Subsequently Flexner and Jobling developed a diplococcus antiserum, prepared from the horse, which has now been used for about two years in the treatment of epidemic meningitis in man. They have collected up to date reports of about 600 cases, and the results in these cases justify the opinion expressed by them in an earlier publication: "It is our belief that the analyses of histories of cases of epidemic meningitis which have been presented furnish convincing proof that the antimeningitic serum, when used by the subdural method of injection in suitable doses and at proper intervals, is capable of reducing the period of illness; of preventing, in a large measure, the chronic lesions and types of the infection; of bringing about complete restoration to health in all but a small number of cases, the recovered, thus lessening the serious, deforming and permanent consequences of meningitis, and of greatly diminishing the fatalities of the disease." Their cases, taken as a whole, show a mortality of 25 per cent; in a few serious cases, in which treatment was begun within the first three or four days, the mortality was 11 per cent. Furthermore, among the 75 per cent. of recoveries, there were few of the serious sequelæ generally noticed after this infection. Hitherto the mortality in epidemic meningitis has ranged from 75 per cent. to 80 per cent., and among the patients who survived the persistence of serious sequelæ has been so great that their survival has been considered unfortunate. In other words, treatment of this infection by the Flexner serum has reversed the proportion of deaths and recoveries.

I have had the opportunity of watching the effect of the serum in 41 cases of meningitis, 29 of which have been proved to be of the meningococcic type. In these 29 proved cases, 16 patients have recovered and 13 have died, a mortality of 44 per cent. Closer analysis of the series shows that of 16 patients receiving the serum within the first week, 6, or 37 per cent., died. Of these 6 cases, 3 were fulminating and the patients died within the first two days; the fourth was a bartender aged 43 and the other 2 were not closely followed up, but each received only one dose of the serum.

This series of cases represents only one of many series, reports from all of which are sent to Flexner, for analysis by him, from time to time. His figures therefore are a better average test of the serum than are my smaller ones. It will be noted that the average mortality in my series is much higher than in the grand total of all series. I attribute this higher mortality in my series to the fact that many of the patients were treated in their own homes, at widely separated points in three different states; hence the difficulty of following them closely and giving repeated doses of the serum. On the other hand, those patients treated directly under the eye, in hospital, as a rule have done better than those treated at home. It is the latter group which have raised the mortality rate. I have therefore come to the conclusion that it is extremely desirable to send meningitis patients to the hospital; they can be watched more closely, the serum can be given more persistently and thoroughly; furthermore, more exhaustive and extensive laboratory investigations, as to blood, spinal fluid, etc., can be carried out in hospitals; the advisability of these investigations is especially great in these early days of the serum, when more accurate knowledge as to its exact action is desired.

Cases studied in detail show several interesting phenomena which have to do with the mortality rate, the method of termination, the general course of the disease and the effect of the serum on the spinal fluid.

The most striking thing, of course, is the high percentage of perfect recoveries, i. e., recoveries without serious sequelæ, and an especially low rate of mortality face usually remaining free. This has been called milk-scab. Later in the course of the disease the eruption may spread to the hands and forearms, although, as a rule, the trunk and extremities are not affected. If the condition remains untreated or does not yield to treatment, the body, neck, arms and legs may be covered with a weeping, crusty eczema, while an intertriginous eruption covers the genitocrural folds. Dry fatty scales are usually found on the surface. Itching, as a rule, does not occur. This variety usually occurs in babies who have been fed artificially with large quantities of milk, eggs and meat broths. This form of the disease is most often of the seborrheic type, and, while the treatment is difficult, spontaneous recovery may occur at the end of the first year, when the quantity of milk is reduced.

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The clinical course of the disease rarely shows any sign of impending death, and a postmortem examination often fails to reveal the cause of death. There are those who believe that the status lymphaticus may explain this condition, though others oppose this view. The opinion has been expressed that sudden death may be due to a myocardial degeneration.

Castenholz attributed death to interference with cutaneous respiration. Others hold that death is caused by infection. Strauss maintains that eczema has nothing to do with the death, and that the infant dies from some other cause than the skin eruption. Heubner and Feer found in their autopsies on babies having eczema all the signs described by Paltauf as characteristic of the status lymphaticus.

As regards the etiologic relationship existing between eczema and asthma, several striking instances in confirmation of such a view have been noted.

TREATMENT

The treatment of this condition resolves itself into local and constitutional measures, mainly the latter. The dermatologists who direct local treatment advise, in addition to the dietetic treatment, that the crusts be removed by softening with liquid petrolatum. In the eczemas of the scalp the removal must be gradual to prevent fever and other serious results. The aluminium acetate used as a poultice in most eczemas acts well in the removal of the crust. After the crusts have been removed the use of the following paste is advised, this being covered with a well-fitting mask:

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The constitutional treatment consists in the main in the regulation of the diet, although measures looking toward relieving any intestinal disturbances must not be overlooked nor underestimated. Dietetic treatment is usually sufficient to cure a beginning eczema and to prevent the occurrence of complications. Some clinicians restrict the amount of nourishment given, besides modifying its composition. The fact that the disease occurs in infants who are breast-fed as well as in those who are fed artificially, emphasizes the necessity of specific treatment of individual cases. Good results have been reported from the employment of what has come to be known as Finklestein's soup. Finklestein thought that this form of eczema was due to milk salts, regardless of fat or protein. Therefore, he coagulated the milk with pegnin, added one-fifth of the whey to the coagulum, and oatmeal water to make the original quantity. Cane sugar was added in varying quantites. A number of clinicians have employed the method, some with good success, while others met only failure. My personal experience has not been such as to warrant me to recommend this treatment.

Good results have also been obtained from the use of skimmed milk, buttermilk, gruel and predigested milk. Whey has yielded remarkably good results in some cases.

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The most striking thing, of course, is the high percentage of perfect recoveries, i. e., recoveries without serious sequelæ, and an especially low rate of mortality among those patients treated early in the disease, this mortality rate being as low as 10 per cent. in some series of patients treated within the first three or four days. Then the abrupt termination of the disease by crisis, in certain cases, has been most striking. Thus in 273 cases of recovery, Flexner and Jobling report 25 per cent. as terminating in this way.

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EFFECT ON THE COURSE OF THE DISEASE

The course of the disease is materially shortened by the serum and a turn for the better is often noticed soon after the first injection; the mentality is clearer, there is less headache and general pain, the temperature is lower and the general condition of the patient seems improved. The rigidities, however, are apt to persist, e. g., the stiffness of the neck, Kernig's sign, etc. It is a remarkable sight to see in the children's ward, for instance, a patient twelve to eighteen hours after an injection, lying with head thrown back, perfectly comfortable and rational, or perhaps even playing with his toys—the same patient who previous to his injection was tossing about in delirium, with headache, high temperature and all the signs of a severe infection.

EFFECT ON THE SPINAL FLUID

[illegible] effect of the serum on the spinal fluid is most interesting and is perhaps more demonstrable in this direction than in any other. The first puncture usually shows a fluid turbid in varying degree; smears from this fluid stained by the Gram method show a variable number of leucocytes, chiefly of the polymorphonuclear variety, and numerous Gram-negative diplococci, some intracellular, but more extracellular. Cultures on different media show an active growth, examination of which confirms the observation of the smears, i. e., a Gram-negative diplococcus. The first injection of serum is now given. Eighteen or twenty-four hours later the second puncture shows a fluid still turbid, more or less so than the first according to the progress of the case and *pari passu* an increased or diminished number of leucocytes, still of the polymorphonuclear variety. But bacteriologically we already see a change: there are more of the diplococci within the cells and fewer without than there were at the first puncture, i. e., phagocytosis has been going on to a considerable extent; at this time the number of cocci extracellular may exceed those intracellular, but with the progress of the case, whether favorable or unfavorable, the extracellular organisms gradually disappear entirely, the number within the cells at first increasing and later diminishing until they too disappear. The more rapid the progress of the case toward recovery, the more rapid the phagocytosis and the total disappearance of the organisms from the spinal fluid. The more protracted the case, the more persistent are the organisms; especially is this so in cases coming late under treatment.

The cultural character of the organisms changes with the progress of the disease; at first profuse, abundant growths are noticed on the media; gradually, however, they grow more slowly, less abundantly, less characteristically, and finally cease to grow. After they cease to grow on cultures, however, they may still be detected in smears; they are present, but apparently dying and too weak to take root and grow; in a short time they disappear from the smears also, of course.

THE CELLULAR ELEMENTS

The behavior of the cellular elements of the spinal fluid is also interesting. At the first puncture the leucocytes are numerous, remarkably so in some cases, and invariably of the [illegible] type, 90 to 95 per cent. usually. [illegible] s favorably the total number diminishes; they lose their characteristic morphology and staining qualities; the proportion of mononuclears is very apt to increase; indeed, in a few long-drawn-out cases the mononuclears have formed a large percentage of the cells.

TECHNIC

The method of giving the serum is important and I now describe it in detail.

All the active workers with the Flexner serum are of the opinion that, in order to get the best results, the serum must be brought closely in contact with the pathologic seat of the disease and that this can be done only by a lumbar puncture. It is useless to give it subcutaneously. After study of my own cases and those of other observers I have come to the following conclusions as to the method of using the serum:

In all cases which clinically resemble meningitis we must do a lumbar puncture; for this purpose we may use the needle of either a large antitoxin syringe or of a large aspirator, holding at least 30 c.c., the minimum dose to be given. Both patient and apparatus, of course, are to be surgically clean. The serum should be ready for injection. The puncture is to be made according to the usual rules laid down in text-books, i. e., in the third or fourth lumbar space, close to the spine, this point being determined by the imaginary line running from crest to crest of the ilia. The needle once in the spinal canal, the fluid begins to flow out; rarely is there any obstruction from clogging of the needle; if so it should be cleared with the obturator. The pressure of the fluid should be noted if possible with the sphygmomanometer or roughly by counting the number of drops per minute; its turbidity and color should also be noted

Collect a few drops of the fluid on clean glass slides for immediate staining and microscopic examination. Also inoculate several test-tubes of culture media by allowing the fluid to trickle directly over the media; finally collect the remaining fluid in a sterile test-tube for counting the contained leucocytes and centrifuging for further examination. Evacuate in all 30 to 45 c.c., if possible. If it be the least bit cloudy or turbid inject the serum at once, without waiting to learn the result of even the smears, injecting as follows: To the needle still in the spinal canal attach the syringe previously filled with the serum (warmed to about the body temperature). Inject slowly, using only gentle pressure in forcing down the piston, give 30 to 45 c.c., except in small babies in whom a smaller amount may be used. Thirty c.c. may be given even if the amount of spinal fluid removed is less than this. It is desirable, though not necessary, to remove spinal fluid equal in amount to the serum to be given.

EXAMINATION OF THE SPINAL FLUID

The spinal fluid should be examined immediately. The glass smears are stained by the Gram method and examined for both cellular elements and organisms; care should be taken to note the relative number of diplococci within and without the leucocytes. Fortunately the smears are fully as reliable as the cultures; hence we do not have to wait long for an exact diagnosis. The cultures should, of course, be incubated and examined later. The total number of leucocytes in the spinal fluid should be counted by the Thoma-Zeiss apparatus as soon after evacuation as possible.

REPETITION OF THE SERUM

If the bacteriologic examination show the presence of the diplococcus subsequent injections of the serum should be given. In the earlier days of the serum it was customary to wait, if improvement followed the first injection, until unfavorable symptoms developed, e. g., increased temperature, great restlessness, pain, headache, etc., and then give the second dose. Subsequent observations, however, especially by Dunn, have shown that better results are attained by giving the serum daily for three or four successive days, regardless of the clinical and bacteriologic progress of the case. The serum can do no harm, and this concentrated method of giving it is undoubtedly better than waiting for symptoms to arise and then hitting them. In severe and fulminating cases the second dose should be given in from twelve to eighteen hours after the first, and 45 c.c. should be given. In several instances I have used this amount of serum without bad results, even though less than this amount of fluid had been removed.

Having thus given our first series of three or four doses on successive days, we may pause and note results; as a rule, improvement will be seen both clinically and bacteriologically, and no further injections will be necessary, at least in patients coming early under treatment. But if after an interval of a day or two untoward symptoms still persist another series of doses should be given daily, perhaps for two days, perhaps for four days, then another pause be observed. This process of alternate giving and withholding of injections may be continued until meningeal symptoms have ceased or bacteria have entirely disappeared from the spinal fluid, or the chronic stage has been established. As a rule, it will be found that the diplococci disappear comparatively early, and that we may then cease our injections. If the serum is to be effective it will be so early in the disease after a few doses. If, however, the organisms persist in the spinal fluid for a long time occasional doses should be given. In all cases, whether those of complete recovery or those running on into the chronic stage, lumbar puncture should be done from time to time until no organisms are found either in smears or cultures. We must leave our patient with a sterile spinal fluid.

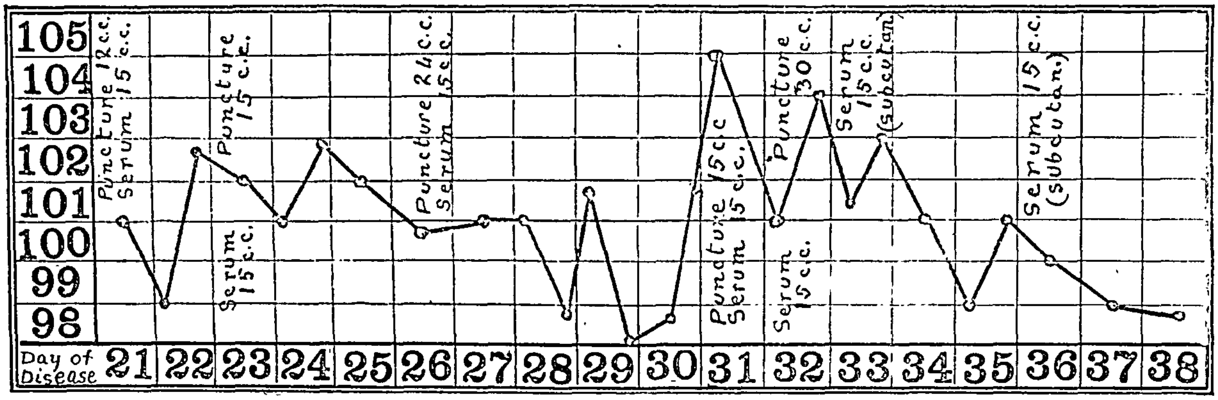

Chart 1.—Temperature curve in Case 1.

Relapses should be treated as fresh cases. Certain complications, if due directly to the meningococcus, may be an indication for the local use of the serum. Thus in one of my series a severe arthritis of the knee, proved by bacteriologic examination of the aspirated fluid to be due to the meningococcus, received three doses of 15 c.c. each, given directly into the joint, with immediate relief to the pain and apparent permanent improvement. Cushing has reported a similar case.

The following brief histories illustrate some of the points mentioned in this paper.

CASE 1.—This illustrates the disadvantage of coming late under treatment and the futility of giving small doses, scattered and in part subcutaneously. The patient, a nine-year-old boy, left the hospital apparently well, on the thirty-eighth day, but returned in three weeks with meningeal symptoms, from which he finally died five weeks later, the spinal fluid during this second stay in the hospital being sterile.

Chart 1 shows the temperature curve and method of dosage. It is a good illustration of how *not* to give the serum.

CASE 2.—George D., aged 3, entered my service at Cook County Hospital, April 13, 1909, on the fifth day of illness. He was given 30 c.c. of serum on each of the two following days, then through a mistake, none on the next two days, with consequent increase of symptoms, was then given 30 c.c. on each of the following four days, the last on the thirteenth day of the disease, with satisfactory results. The spinal fluid was sterile at the last puncture. The case illustrates the danger of ceasing injections too early and the value of sufficiently prolonged daily doses.

CASE 3.—A seven-year-old girl received her first injection on the second day. The case terminated by crisis after only two doses of the serum. Chart 3 tells the story graphically.

CASE 4.—In the case of Nately C., aged 15, the serum was not used persistently enough, and consequently we see a long-drawn-out case, though the patient finally recovered after individual, isolated doses at long intervals. The serum was given on the ninth, tenth, fourteenth, seventeenth, twenty-fourth, twenty-sixth and thirty-sixth days, respectively, the spinal fluid on the last date being sterile. The case also illustrates the value of perseverance in the use of the serum, even late into the disease. The patient was discharged from the hospital on the forty-third day.

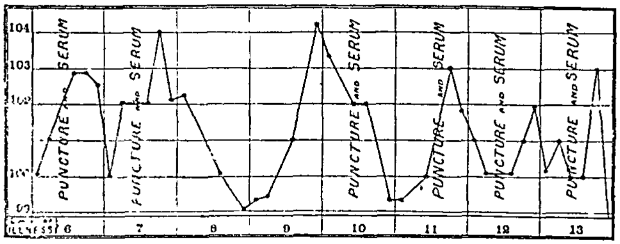

Chart 2.—Temperature curve in Case 2.

CASE 5.—This case, from the service of Drs. Poorman and Ellis Kerr, at the Oak Park Hospital, was a severe fulminating case. The patient, Amelia D., was given her first injection twenty-three hours after the onset, with marked improvement in the general condition, temperature and spinal fluid. The injection was repeated on the second day, omitted on the third with increase in symptoms, given on the fourth and fifth days.

with diminution of the meningeal symptoms, but continued high temperature due to arthritis of the right knee joint. Fluid aspirated from this joint showed the meningococcus; serum, 15 c.c., was therefore injected directly into the joint on the ninth, tenth and eleventh days respectively, with much relief to the pain. Serum, 30 c.c., was also injected into the spinal canal on the seventh and ninth days, respectively, the fluid from the last puncture being sterile. A further complication, apparently an osteomyelitis of the right femur, prolonged the convalescence, but this also eventually disappeared and the patient has now, June 9, had a normal temperature for two weeks and is steadily improving.

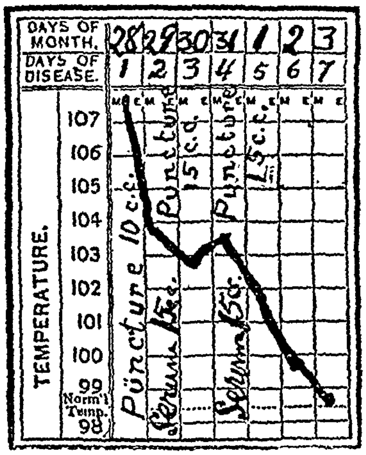

Chart 3.—Temperature curve in Case 3.

The actual disease itself, the meningitis, in this case, was evidently checked by the first two doses of the serum, as was demonstrated, not only by the diminution in the meningeal symptoms, but also by improvement in the character of the spinal fluid. The termination of the disease itself was by crisis; indeed, it might almost be said that it aborted, so sudden and remarkable was the drop in the temperature. The prolonged character of the case was due to the complications, over which the serum had no apparent control, aside from the relief of joint pain when locally applied.

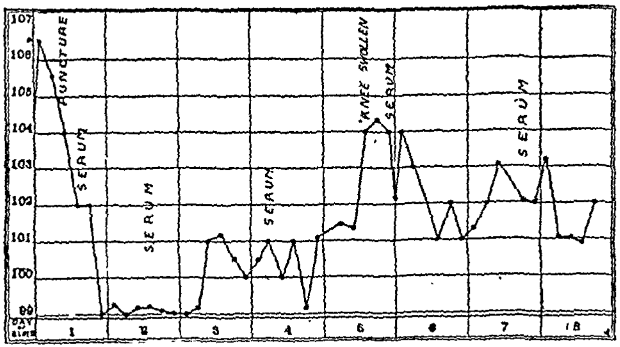

Chart 4.—Temperature curve in Case 5.

SUMMARY

The main points in this paper may be briefly summarized as follows:

1. In all cases clinically suggesting meningitis, do a lumbar puncture as early as possible.

2. If the fluid thus obtained be turbid, immediately inject at least 30 c.c. of Flexner serum directly into the spinal canal without waiting to hear the bacteriologic report of the fluid.

3. Examine the spinal fluid [illegible] are more important than cult[illegible] *intracellularis* be found, repeat the injections daily for the three or four following days; in severe cases give the second dose twelve hours after the first.

4. After the first series of doses, wait two or three days, and if necessary, repeat the series.

5. The serum is a specific and of value in meningococcic meningitis only.

6. It is useless to give the serum subcutaneously.

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ABSTRACT OF DISCUSSION

DR. CHARLES HUNTER DUNN, Boston: The mortality of this disease at the Children's Hospital in Boston for the past ten years may be interesting. The average number treated was twenty, *i. e.*, cases in which lumbar puncture confirmed the diagnosis of infection with the diplococcus intracellularis. Up to 1902 there was no particular treatment. In 1903-04-05 the condition was treated by repeated lumbar puncture. In 1906 we gave the diphtheria serum a trial, and in 1907 used a vaccine prepared from the diplococcus intracellularis. It was from November, 1907, to November, 1908, that the Flexner serum was first used. During the preceding nine years the mortality had varied from 60 to 80 per cent.—in fact, the mortality was not affected by the treatment. During the last year the mortality dropped to 19 per cent. Dr. Churchill was right in saying that I gave 45 c.c. of serum without getting any spinal fluid. Twice I have seen serious symptoms of collapse in babies from a large dose of the serum without withdrawal of a sufficient amount of fluid.

There are three classes of these fatal cases; first, the fulminating cases, in which the babies die before the serum has time to get in its work; second, the late cases in which so much damage had been done before the serum was given that the patient dies from the injury already inflicted on the nervous system. The third are the resistant cases. There is a type of case in which the organism disappears entirely yet there is no abatement of the symptoms. It has been thought by Flexner that this is due to a complete closure of the canal, as in some of these cases at autopsy there was found within the ventricles an enormous number of organisms. But there are cases in which the serum has practically no effect on the fluid or the symptoms. Recently we had two cases in which no effect at all appeared. I think possibly one explanation of that type of case is that it may be due to a variety of the *Diplococcus intracellularis* that is particularly resistant. Dr. Flexner wants any one who comes across such a case to send him a strain of the organism that he may inject his horses with it and get an effective serum for treatment.

DR. ALFRED HAND, Philadelphia: In the Children's Hospital in Philadelphia we have had but one case of the epidemic form treated with the serum, and this case worked very well. The first day we obtained 45 c.c. of fluid and got the *Diplococcus intracellularis*. On the second day I withdrew 45 c.c. of fluid and injected 30 c.c. of the serum. On the third day I did the same. On the fourth day I could get but 15 c.c. of the fluid and the child was greatly improved. I thought that I was justified in putting in 30 c.c. again and I did so with very little pressure. A couple of hours afterward the child was seized with a violent headache and was screaming with pain, but morphin relieved it, and in five days the child was perfectly well. I have seen cases run on for eleven, twelve, or thirteen months and then the child would die, one occasionally getting well. This case just mentioned was the first case in which we felt that the treatment had had some effect in curing the patient. I felt that there was no harm done by injecting a larger amount of serum.

DR. FRANK ALLEN, Chicago: I have had several cases of cerebrospinal meningitis treated with Flexner's serum. My experience has been much like that of Dr. Churchill. Often lumbar puncture alone would cause the temperature to drop, but without the injection of the serum it would rise again. With the injection of three or four doses of serum the temperature would drop and remain down. In one case in which I could not find the organism the patient died before I could make an injection. Another patient had all the symptoms of pneumonia. On the third day this patient developed cerebral symptoms, puncture showed the diplococcus; the serum was used with almost immediate improvement. In this case we had difficulty in getting out enough fluid. We used 15 c.c., and at one time 30 c.c., without any trouble. The spinal fluid cleared up and no diplococci could be found, but the pneumonia continued and the patient was in the hospital for three weeks with pneumonia, without recurrence of spinal symptoms. In most of the cases the temperature rapidly dropped after treatment.

Dr. William M. Welch, Philadelphia: I have seen Flexner's serum used in a large number of cases of cerebrospinal meningitis in our Municipal Hospital and I regret very much that I have no exact data at hand to show the results. The members of the hospital staff feel sure that the death rate has been considerably reduced by the serum treatment. We have found that it is more useful in the true form of the disease, in which the *Diplococcus intracellularis* is present. But I rise more particularly to speak of an unfortunate result in one instance. The patient was a negro, who was admitted to the hospital with well-marked symptoms of cerebrospinal meningitis. Lumbar puncture was done, but no fluid flowed out. The direction of the needle was changed once or twice, but still no fluid was obtained. It was determined, however, to inject the serum. The patient was sitting in the upright position with his arms and chest resting on the foot of the bed; 15 c.c. were injected without any symptoms, but before the entire contents of the second bottle of 15 c.c. had been used the man complained of severe pain in his head; his head dropped forward and he became unconscious. The respirations were very slow, not more than eight or ten a minute. The breathing was stertorous. The patient never regained consciousness, and died within fifteen or twenty minutes. I should conclude from this experience that it is dangerous to introduce into the spinal canal any considerable amount of the serum without first withdrawing a similar amount of the spinal fluid.

Dr. George D. Scott, New York: It is important to lay particular stress on the fact that the *Diplococcus intracellularis* should be found before the employment of the serum. In the epidemic in New York City some time ago I saw a number of cases in the hospital and in private practice and it was a question often of an absolute diagnosis from lumbar puncture alone. In many cases a wrong diagnosis had been made, sometimes due to the fact that the bacteriologist was not so well informed as he might have been. I find that it is better to inject a small amount of serum more often and not to allow too much of the spinal fluid to escape at each injection. Bearing those points in mind, we can get more benefit from the serum as Dr. Flexner has stated.

Dr. F. S. Churchill: I have had the same experience of injecting more serum than we have removed fluid. I would emphasize what Dr. Scott says that it is of the utmost importance to remember that the serum is a specific. I think I must have been misunderstood by one of the gentlemen. I did not say that the serum was of *more* value in the epidemic form. It is of no value whatever in any other form of the disease. It is a specific for epidemic cerebrospinal meningitis and that fact must be borne in mind. In regard to the unfortunate termination of the case reported from Philadelphia I do not know whether the fact that the patient was sitting up had anything to do with it, but I never have given it to a patient sitting up. In one case of a baby, two years old, where I had employed two successive doses, I used an anesthetic at the third injection. It was a mild case and the baby was pretty thoroughly conscious. I removed the fluid, injected the serum, withdrew my needle and the child seemed all right. But suddenly the breathing stopped and, though we worked with her nearly an hour, she died. In that case the fluid was almost sterile at the last examination. I think I should use gas another time instead of any other anesthetic. We must remember that the serum must be given as early as possible, it must be given in the spinal canal and it must be repeated until the organisms are not found in the spinal fluid.

Practice of Medicine.—The everyday internist can and must be able to practice medicine scientifically. The most important aid to this end is a clinical laboratory properly equipped.—O. I. Halbert, in *Texas State Journal of Medicine.*

HEMOLYSIS OF HUMAN AND RABBIT ERYTHROCYTES BY CROTALUS VENOM *

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PHILADELPHIA

The first studies of the hemolytic action of serpents' venoms seem to have been made by Stevens and Myers,[1] who found that when cobra venom was added to shed blood, *in vitro*, destruction of the corpuscles (hemolysis) and retardation of coagulation took place. They also found the hemolytic power of the venom inhibited by antivenomous serum.

Myers[2] later studied the hemolytic substance—"cobralysine"—of the venom and found it destroyed by heat. During these studies he found that the susceptibility of the erythrocytes to cobralysine *in vitro* bore no relation to the susceptibilty of the animal to subcutaneous intoxication by venom.

Stephens[3] found that the hemolytic constituents of different venoms were not identical.

Myers[4] made further studies of venom hemolysins and serum antihemolysins.

Mitchell and Flexner[5] and Flexner and Noguchi[6] have further studied the phenomena of agglutination, hemolysis, leucolysis, and the germicidal activity of the blood serum. They found that the phenomena of agglutination appeared rapidly in favorable solutions, while in weak solutions a delay of some minutes up to an hour might be noted. Active agglutination took place in 0.2 per cent. solutions, while weaker ones either produce no change at all or show imperfect fusion. They studied corpuscles of the dog, rabbit, guinea-pig, sheep, ox, pig, necturus and frog. The phenomena of hemolysis were found to be complicated. Solutions of 0.2 per cent. were found most favorable for bringing out the hemolytic property, though the different venoms differed considerably, cobra venom being most active, water moccasin, copperhead and rattlesnake venoms less so in the order named. They also found that the corpuscles of different animals differed in their susceptibility to the action of the venom, those of the dog's blood being most easily affected, those of ox blood least so. The intermediate animals in order of susceptibility were sheep, guinea-pig, pig and rabbit. Solutions of 5 per cent. were needed to hemolyze the corpuscles of the ox. Heating to from 75 to 80 degrees C. for 30 minutes does not diminish the hemolytic action of any venom; heating to from 90 to 96 degrees diminishes the activity of rattlesnake venom; heating to 100 degrees C. for fifteen minutes diminishes the hemolytic activity of cobra, moccasin and copperhead venom a little. They believe that venoms contain various intermediate bodies, not all of these being absorbed by any one kind of corpuscles. Venom leucolysis was carefully studied and it was found that venoms contain principles that are agglutinating and dissolving for the white corpuscles of which the agglutinating principle may be identical with those for the erythrocytes. The leucolytic principle is distinct from the hemolytic principle. The several varieties of white cells show different susceptibilities to the action of the venom.

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* Read in the Section on Pathology and Physiology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

1. Brit. Med. Jour., Mar. 5, 1898, p. 621.
2. Jour. of Path. and Bact., 1899-1900, p. 415.
3. Jour. of Path. and Bact., 1899-1900, p. 273.
4. Trans. of the Path. Soc., London, Feb. 6, 1900.
5. National Academy of Sciences, 1901.
6. Jour. Exper. Med., March, 1902, vi, 3, p. 277.

Flexner and Noguchi[7] found that venoms have a cytolytic action on many kinds of cells, probably because of a pleurality of the amboceptors they contain.

Kyes[8] finds that the hemolysis by venom bears a definite relation to the lecithin content of the blood, by which the venom amboceptor is activated.

Noguchi[6] found that the hemolytic principle of venom extended over a wider group of animals than the agglutinative principle, its activity on the bloods of different animals diminishing the more widely the vertebrata were departed from. Cobra venom contains the largest, crotalus venom the smallest number of hemolytic units, while moccasin venom contains the greatest number of agglutinative units for such bloods. The mechanism of hemolysis is identical with that for the bloods of warm-blooded animals; complements are, therefore, present in all vertebrates and in many, at least, of the invertebrates. The heat liability of the venom agglutinins and hemolysins for cold-blooded animals agrees closely with that for warm-blooded animals.

The hemolytic activity of the venoms of the Indian and Australian snakes, and the effects of the antivenomous serums, have been made the subjects of several papers by Lamb.[9]

Throughout the writings to which reference has been made either no mention, or very brief mention is made of the effect of the venoms, and particularly of the rattlesnake venom on human corpuscles. As the rattlesnake is the most common venomous snake of this country, it seemed to us that the effects of its venom on the blood of its most important, though fortunately infrequent victim, man, ought to be investigated, and we set to work accordingly. As in the course of our studies certain facts were brought out confirming or refuting the work of those that preceded us, we feel justified in publishing what we found.

In a previous paper[10] we reported studies made about the same time on the agglutinating effect of crotalus venom on human and rabbit erythrocytes.

The venom used in both series of experiments was obtained for us from the *Crotalus adamanteus* through a special collector in Texas. According to the directions given him, the freshly collected venom was spread out in a thin layer on the surface of clean dinner-plates and dried in the sun. In this way a considerable quantity of excellent dry venom was secured. When the venom was to be employed for making the hemolytic tests, the dry product was finely pulverized, dissolved in the least possible quantity of 0.85 per cent. sodium chlorid solution, filtered through fine filter paper and the filtrate evaporated. The resulting scales were again pulverized, placed in a sterile test tube, covered with chloroform and stood in the thermostat until the chloroform had evaporated through the cotton plug with which the tube was stoppered. Experiments showed that the venom so treated was unmodified as regards hemolytic or agglutinative activity. It was from the powder so prepared that the solutions for hemolysis were made.

The blood was secured from the tip of a thoroughly cleansed finger, the same blood (W.'s) being used in all the tests. By making a deep puncture with a somewhat broad lancet, from one to three cubic centimeters could be secured. The blood was caught in a sterile test tube, immediately defibrinated, then centrifugalized. The serum was removed with a pipette to be used subsequently as serum complement, the corpuscles washed three times in sterile salt solution and finally made into a 5 per cent. suspension in 0.85 per cent. sodium chlorid solution.

In making the hemolytic tests, 1 c.c. of the corpuscular suspension was placed in each of a series of tubes suitable for use in the centrifuge, 0.5 c.c. of a mixture of one part of normal human serum (that removed with the pipette from the centrifuge tube as mentioned above) and two parts sterile saline solution and varying quantities of venom added. The mixture was shaken gently and enough saline solution added to bring up the volume to 2 c.c. The tubes were then stood in the thermostat at 37 degrees C. for one hour, when the first observation was made. They were then again gently shaken and placed in the icebox over night, after which the final observations were made by whirling the tubes for 5 minutes in the centrifuge and then examining the clear fluid for variations in the color tint.

In the tabulations we express the occurrence of hemolysis by the letter H, doubling or trebling the letters to express the degree. "H?" means doubtful hemolysis or a very faint trace. "HC" means complete hemolysis. We also exhibit the associated agglutination by the use of the letter A. The amount and character of the sediment is, in general, perhaps, a better index to the amount of hemolysis. In these experiments the sediments in tubes marked H were all the same, those in tubes marked HH were the same but different than those in tubes H or HHH, so that, whether the tints or sediments were used as indices, the results would be the same.

The quantity of venom has been expressed by some of those who experimented with the hemolytic reactions in the form of percentages, but, as these vary according to the final dilution of the mixture, and as after some experiments we were obliged to increase from a 2 c.c. to a 10 c.c. mixture, we believe it to be more accurate to express the quantity of venom in the form of grams of the dry venom in the final mixture.

TABLE 1.—Two Cubic Centimeter Dilutions

Grams dry venom of *Crotalus adamanteus* in total quantity of final mixture.	%		Normal human erythrocytes from defibrinated blood susp. in 0.85 % NaCl sol., (5% susp.)		Normal human serum diluted with 2 vols. normal NaCl solution.		Results.
0.001	(.05)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.005	(.25)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0 01	(.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.0125	(.625)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.03	(1.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.05	(2.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH
0.06	(3)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH
0.2	(10)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H

TABLE 2.—Two Cubic Centimeter Dilutions

0.01	(5)	plus	1 c.c.	plus	1.0 c.c.	equals	A plus O
0.04	(2)	plus	1 c.c.	plus	1.0 c.c.	equals	A plus H

Table 1 shows that increasing additions of venom result in increasing hemolysis until a certain point is reached. Beyond this point added venom diminishes the hemolytic activity, presumably because of excess of amboceptor units in the venom. Table 2 shows that the same disturbance results from excess of complementary units; when 1 c.c. of the serum dilution, instead of the 0.5 [illegible] Table 1, is used, hemolysis is greatly [illegible] in Table 1, 0.01, 0.03 and 0.05 grams of venom produce marked hemolysis, but in Table 2, 0.01 causes no hemolysis and 0.04 very slight hemolysis.

Whether these results depend on the Neisser-Wechsberg phenomenon seems to us to be problematical.

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[7] Univ. Penn. Bull., July-August, 1903.

[8] Berl. klin. Wchnschr., 1903, xli, 21, 57, 82.

[9] Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government in India, No. 16, 1904, and No. 17, 1905.

[10] Read at the meeting of the American Association of Pathologists and Bacteriologists, Boston, April 9-10, 1909.

We soon found it impracticable to continue to work with 2 c.c. mixtures, because of the difficulty of dissolving the necessary quantity of venom in the small quantity of fluid used. We were, therefore, obliged to change to a 10 c.c. mixture. In this mixture we deal with the same number of corpuscles, the same quantity of serum and the same quantity of venom, though, of course, the percentage of venom is changed by the dilution. This made us abandon the percentage expression and make use of figures indicative of the actual weight of dry venom added to the mixture.

Table 3 shows the details of experiments made with the 10 c.c. mixture for comparison with those in Table 1 in which 2 c.c. mixtures were employed. It will be seen that the results are the same. This was to be expected, as the proportions were the same. The percentages of venom are, however, entirely different.

TABLE 3.—TEN CUBIC CENTIMETER DILUTIONS

Grams of dry venom of *Crotalus adamanteus* in total quantity of final mixture.	%		5% susp. of normal human erythrocytes from defibrinated blood, in 0.85% NaCl solution.		Normal human serum diluted with 2 vols. normal NaCl solution.		Results.
0.01	(0.1)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.03	(0.3)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.05	(0.5)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH
0.07	(0.7)	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHHH

TABLE 4.—TEN CUBIC CENTIMETER DILUTIONS

		Corpuscles from citrated blood.		Citrated plasma.		
0.01	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.03	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.05	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.07	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH

In our paper on the agglutination of the corpuscles, we have shown that it makes considerable difference in the rapidity with which the reaction takes place whether defibrinated or citrated blood is used to furnish the corpuscles.

In investigating this problem with reference to hemolysis we used the following technic:

The blood from the finger tip was permitted to flow into a sterile tube containing sterile sodium citrate solution (2 per cent. in 0.85 per cent. sodium chlorid solution). The fluids were well mixed, then centrifuged, the supernatant fluid removed with a pipette to be used in lieu of the serum ordinarily employed and the corpuscles washed three times as usual, then made into a 5 per cent. suspension.

One c.c. of the suspension was placed in each of a series of tubes, varying quantities of venom were added, and to each was added a quantity of the citrated plasma shown by calculation to be the equivalent of the 0.5 c.c. of the serum mixture ordinarily employed. Thus the conditions, after dilution to 10 c.c., were identical with the other experiments except that the corpuscles had been acted on by the sodium citrate and a small quantity of sodium citrate remained mixed with the plasma. The experiment in Table 4 shows that the hemolysis is slightly less when the citrated corpuscles are employed for the test. Thus the effect of the citrate is to diminish hemolysis and to retard agglutination, using defibrinated blood as a standard.

In order to compare our results with some known quantity, we next made a series of tests in which rabbits' corpuscles instead of human corpuscles were employed.

Table 5 shows the hemolytic effect of the crotalus venom on rabbit erythrocytes from defibrinated and citrated blood. As in the human blood, there is a diminution in the amount of hemolysis when the citrate is employed. It will also be observed that the defibrinated rabbit corpuscles are about ten times as sensitive to the hemolytic action of the venom as are the citrated corpuscles.

TABLE 5.—TEN CUBIC CENTIMETER DILUTIONS: RABBIT

Grams of dry venom of *Crotalus adamanteus* in total quantity of mixture.		5% susp. of norm. erythrocytes from defibrinated blood in 0.85% NaCl solution.		Normal rabbit serum diluted with 2 vols. of NaCl solution.		Results.
0.0000125	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H
0.000125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.00125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.0125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HHH
		RABBIT: 5% susp. of normal erythrocytes from citrated blood in 0.85% NaCl sol.				
0.0000125	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.000125	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.00125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.0125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH
0.125	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH

Flexner and Noguchi found that when venom was heated to from 75 to 80 degrees C. the hemolytic properties were not affected. As no mention was made of the state in which the venom was heated, we decided to try whether the fact was true both of pulverized dry venom and of venom in solution.

To test the effect of heating it in the dry state, a small quantity was spread on the bottom of a small Erlenmeyer flask and floated on a water bath which was kept for 30 minutes between 75 and 80 degrees C. The powder was then dissolved and hemolytic tests made on both human and rabbit corpuscles. The results of the experiments are shown in Tables 6 and 7. When Table 6 is compared with Table 5, it becomes evident that heating the venom, even in the dry state, produces a marked diminution of the hemolytic activity, for in Table 5 hemolysis is distinct in 10 c.c. mixtures when only 0.0000125 grams of venom are added, though in Table 6 hemolysis begins only after 0.002 grams of the heated venom have been added. The same result was obtained with both defibrinated and citrated serums.

TABLE 6.—VENOM POWDER HEATED DRY FOR 30 MINUTES AT 75° TO 80° C.

Grams of dry venom of *Crotalus adamanteus* in total quantity of final mixture.		5% susp. of rabbits' erythrocytes, from defibrinated blood in 0.85% NaCl solution.		Normal rabbit serum diluted with 2 vols. 0.85% NaCl solution.		Results.
0.002	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H(?)
0.01	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H
0.03	plus	1 c.c.	plus	0.5 c.c.	equals	A plus HH

TABLE 7.—VENOM POWDER HEATED DRY FOR 30 MINUTES AT 75° TO 80° C.

		5% susp. of normal human erythrocytes from defibrinated blood in 0.85% NaCl solution.				
0.002	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H(?)
0.01	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H (slight)
0.03	plus	1 c.c.	plus	0.5 c.c.	equals	A plus H (slight)

When human corpuscles were employed the effect of heating the venom was much less marked. Thus when Table 3 is compared with Table 7 it will be seen that the unheated venom produces hemolysis when quantities of 0.01 gram and upward are added, and becomes marked when 0.03 grams are reached, though when the heated venom is added the hemolysis effected by 0.01 is very slight and with 0.03 is still very slight. Experiments made with citrated blood showed the same result.

It thus becomes apparent that there is a difference in the hemolytic activity of the heated and unheated venoms for rabbit and human corpuscles.

This led us to conjecture that the hemolytic factors for these different corpuscles might be different, but this we were unable to prove.

When the venom was first dissolved and then heated, the heating being accomplished in the same manner, by placing the solution in a small Erlenmeyer flask and floating it on a water bath kept for 30 minutes at between 75 and 80 degrees C., a much more pronounced destruction of the hemolytic power was brought about.

The results are shown in Table 8. When human corpuscles are exposed to unheated venom solutions, as shown in Table 1, hemolysis begins when 0.001 grams are added: when the venom solution is heated, when 0.002 grams are added. If, however, *rabbit corpuscles* are used, the results are entirely different, for when the unheated solution is employed, hemolysis begins (Table 5) at 0.0000125 grams, but when the solution is heated at 0.002 grams. Practically the same diminution of hemolysis takes place whether defibrinated or citrated blood is used.

TABLE 8.—Venom Solutions Heated for One-Half Hour at 75° to 80° C.

Grams of dry venom of *Crotalus adamanteus* in total quantity of final mixture.		5% susp. of normal human erythrocytes in 0.85% NaCl solution.		Normal human serum diluted with 2 vols. of saline solution.		Results.
0.00001	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.0005	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.001	plus	1 c.c.	plus	0.5 c.c.	equals	O plus O
0.002	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H(?)
		5% susp. of normal rabbits' corpuscles from defibrinated blood in 0.85% NaCl solution.				
0.0002	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H?
0.0005	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H?
0.001	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H?
0.0015	plus	1 c.c.	plus	0.5 c.c.	equals	O plus H

We observed an interesting change in the hemoglobin of the corpuscles not hemolyzed.

If the corpuscles from a tube containing venom and serum in quantities too small to effect hemolysis be collected by centrifugalization and suspended in fresh 0.85 per cent. sodium chlorid solution, the corpuscles remain unchanged. If again collected and again suspended in fresh saline solution, a change may or may not be seen; but if the operation be repeated a third time the corpuscles undergo immediate hemolysis in the salt solution.

In the course of some immunization experiments that turned out badly, we prepared a venom solution by dissolving the dry venom in 100 parts of 0.85 per cent. sodium chlorid solution and then saturating it with chloretone. This prevented bacterial contamination and the toxic properties of the venom were preserved for considerable time. On using this solution for a hemolytic test, we found complete hemolysis in 30 minutes when it was not expected. We then tried a saturated solution of chloretone in the normal salt solution, and found that the antiseptic itself caused rapid and complete hemolysis when in saturated solution. We were thus led to abandon the use of chloretone for preserving the venom solutions.

As human blood in quantities sufficient to furnish enough corpuscles for making hemolytic tests is not easily obtained, we were interested to determine how long the corpuscles, once suspended in the saline solution, might be available for use. Suspensions (5 per cent.) of both human and rabbit corpuscles were, therefore, prepared and kept in the icebox, being subjected to hemolytic tests from time to time. We found that during 24 hours there was very little change, but that after 36 hours hemolysis took place much more rapidly than before.

From this we came to the conclusion that the corpuscular suspensions should be prepared every day and not kept over, and the experiments we report were always made on freshly secured blood.

In order to study the effects of crotalus venom on the leucocytes, we made use of the sediments collected by centrifugating the tubes in which hemolysis had taken place. This was spread on slides and stained by the Romanowsky method. All these observations were, therefore, made on corpuscles that had been in contact with the venom in the icebox for 24 hours, and do not form very satisfactory data.

We found that the small lymphocytes stained well and appeared quite normal even in tubes to which as much as 0.07 grams of venom had been added.

Large lymphocytes were apparently unaffected by quantities of venom less than 0.03 grams per 10 c.c. of fluid. They were not found in tubes containing 0.03 grams and upward.

The polymorphonuclear neutrophiles showed the most marked changes, and are, therefore, probably the most susceptible to the cytolytic action of the venom. Even small quantities of the venom produced marked karyolysis with a hyaline change of the cytoplasm. This is an interesting observation which may have some bearing on the invasion of the tissues by bacteria which so quickly takes place after venom injection.

The eosinophiles seemed to resist the venom very well. In no case, even up to the addition of 0.07 grams to the 10 c.c. mixture, were they completely destroyed, though the nuclei refused to stain. The granules were never destroyed. No basophilic cells were found in any of the sediments.

CONCLUSIONS

1. Crotalus venom is capable of hemolyzing red corpuscles of both man and the rabbit in the presence of serum or of citrated plasma.

2. When an excess of the venom, or an excess of the serum is present, hemolysis diminishes.

3. In the properly proportioned mixtures, hemolysis takes place regardless of the extent to which the mixtures may be diluted by the addition of salt solution.

4. Defibrinated blood furnishes corpuscles more sensitive to the venom than citrated blood.

5. Heating dry venom diminishes its hemolytic activity for human corpuscles a little, for rabbit corpuscles a great deal.

6. Heating solutions of venom diminishes its activity for human corpuscles a little, for rabbit corpuscles a great deal.

7. Rabbit corpuscles are much more susceptible to the hemolytic effect of the venom than human corpuscles.

8. Corpuscles in suspension should not be kept from day to day for venom experiments.

9. The small lymphocytes and eosinophiles resist the venom better than the large lymphocytes and polymorphonuclear neutrophiles.

ABSTRACT OF DISCUSSION

DR. D. H. BERGEY, Philadelphia: Presumably, from the manner in which the experiments have been conducted, the hemolysis brought about by the venom is due to the presence in it of an amboceptor; and the addition of serum to the mixture of venom and blood supplies the complement. How do the authors of the paper explain the disappearance of hemolytic power, since we know that amboceptors are supposed to be thermostabile?

DR. E. C. L. MILLER, Detroit: Is there any especial explanation for the fact that venom acts in proportion to the absolute quantity present and not in proportion to the dilution, as it forms, in this respect, an exception to the ordinary rule?

DR. JOSEPH MCFARLAND, Philadelphia: When we found that it was necessary to change from a mixture containing only 2 c.c. to one containing 10 c.c., the question of the relation of proportion to quantity arose, and we discovered that, as shown by a comparison of tables, the increase in quantity had no effect at all on the action of the venom. Then I suggested that it would be interesting to try still higher dilutions, which we did; and we found no change in the behavior of mixtures of 250 c.c., the largest amount used, hemolysis taking place in this the same as in smaller quantities. I cannot answer Dr. Bergey's question quite so positively. Just what the loss of hemolytic power in the heated venom indicates, I do not know. It might indicate that the amboceptors were in a different class from the ordinary bacteriolytic or hemolytic amboceptors. I scarcely think, however, that this would be the case. I believe tnat it is true that heating disturbs all amboceptors somewhat and that the virulence is diminished in proportion to the amount of heat and the length of time in which the heating takes place.

DR. D. H. BERGEY: I believe that this is true, but do not think that it is true to the extent that it has been found in your experiments.

DR. MCFARLAND: The disturbance affected about half its virulence in this case.

SOME POINTS OF CONTACT BETWEEN NEUROLOGY AND ORTHOPEDIC SURGERY *

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It is the purpose of this paper to call attention to a few of the more recently understood conditions which produce symptoms for which either the neurologist or the orthopedic surgeon may be consulted and where frequently the methods peculiar to both specialties are of advantage in bringing about relief. It is not proposed to discuss the many problems in which the two specialties have been for long correlated, such as the treatment of the infantile or spastic paralyses, as there is little new to add to such subjects, even if the time were sufficient, and in those which are considered the time is so short that only a brief mention of them is possible. It is the hope, however, that the statements here made may serve as suggestions which will lead to a more thorough investigation of the conditions so that an even better understanding of their various phases may be obtained. The honor of being permitted to speak before such a body as this is fully appreciated, and it is my earnest hope that that which is presented may be of sufficient value to justify the amount of time allotted.

SPINAL LESIONS

In a considerable number of lesions of the spine, other than tuberculous, the inflammatory swelling or the osseous thickening which is a part of such diseases frequently causes pressure on or irritation of the nerve roots and results in symptoms referred to the portion of the body that the irritated nerve supplies. These symptoms may consist of pain, at other times areas of hyperesthesia or anesthesia, or even at other times true paralysis, the exact symptoms depending on the special nerve involved and the amount of pressure or irritation present.

Such a condition may result from the involvement of any region of the spine, but naturally in the regions of the greatest mobility, the cervical and lumbar, they will be most often met. The symptoms present in the given case must, therefore, depend very largely on the region of the spine involved. In the cervical region the symptoms will naturally be referred to the neck or arms or to the areas supplied by the cervical or brachial plexuses. In the dorsal region, aside from the symptoms present at the seat of the disease, the pain referred along the course of the intercostal nerves is the most common. In the lumbar region the referred pain may show in any part supplied by the lumbar and sacral plexuses, the low back or abdomen, the pelvis or perineum, or any part of the legs.

Whenever such spinal conditions exist the referred symptoms, those which most often lead to the consultation of the neurologist, are almost invariably either entirely on one side or at least much more marked on one side than on the other. With the dorsal or lumbar spinal lesions the unilateral manifestation is almost always the case, but in the cervical region, while one side is always worse, nevertheless both sides are usually somewhat involved.

The symptoms are always, if the disease is at all acute, aggravated by sudden movement of the affected part, such as in coughing or sneezing, slipping or any unguarded motion. With lesions in the lumbar or in the cervical spine the pain is commonly worse at night because of the opportunities offered for sag of these portions of the spine with the relaxation of the muscles, such as takes place during sleep.

Of the special diseases which may cause symptoms of this sort it is not possible in so short a time to do more than briefly to mention them, and the reader must refer to the various articles published elsewhere for further details. The most common, however, are the chronic infectious arthritis and the hypertrophic arthritis, but it should be remembered that any disease in which there is inflammatory swelling or thickening about the vertebral articulations may result not only in symptoms referred directly to the seat of the disease, but also to symptoms referred to other parts, owing to the pressure on or irritation of the nerve roots. With the two most common conditions, the infectious arthritis is the more acute, and the local symptoms are the most pronounced. There is more local swelling, which in the cervical spine can often be felt, and the muscular spasm causing the limitation of the motion is much more marked than with the hypertrophic arthritis. The referred pains are more sudden in their development and more acute, both in regard to the intensity of the pain as well as the duration. The recovery in such a type of disease should be correspondingly rapid and is usually complete.

With the hypertrophic arthritis the process is slow in its onset and there may be an entire absence of subjective symptoms at the seat of the disease. The referred symptoms have so little else to show for them that the real nature of the trouble is apt to be overlooked unless the examination be most thorough. In this type not only is the onset slow, but the recovery is correspond-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

inly slow, and it is in this type at times that the thickening which causes the pressure on the nerves is so marked and so dense that complete restoration of the function may never occur.

The following cases are reported as illustrative of these forms of disease:

Case 1.—Hypertrophic arthritis of the cervical spine resulting in sufficient pressure on the cervical and brachial plexuses to cause paralysis of the arms.

Patient.—Mrs. McC., aged 58, by occupation a nurse, had always been well and actively engaged in her work until the present sickness. In July, 1893, she was caught in a thundershower and her clothing was wet through. The next morning she complained of pain in the neck, with some tenderness in the upper part of the chest. There was no cough or expectoration. The pain in the neck increased in severity very rapidly, until the slightest motion caused the most intense suffering, and because of this she was admitted to the Good Samaritan Hospital.

Examination.—At the time of the first examination she was evidently suffering a good deal. The head was held a little to one side, the chin to the left, the shoulders drawn up, and all motions were most carefully guarded by muscular contraction. Any attempt at motion caused great pain. None of the other joints were in the last involved, and aside from this local condition the patient seemed well.

Treatment and Course of Disease.—For the first week or two the patient was kept quiet in bed, and the various rheumatic remedies freely given with very little if any effect. After this a Thomas collar was applied for more complete fixation, and following this light-weight extension was used. These gave some relief, but neither could be used continuously because of the nervousness of the patient, so that the two applications were used alternately, each being worn for a few hours. In three or four weeks after the beginning of the attack a swelling appeared in the right side of the neck. This was about the size of a small lemon, and was apparently connected with the spine. At the same time numbness of the left arm was noticed, with some impairment of motion, and this condition continued and increased until the arm was almost entirely helpless. The right arm and both legs also became involved, never in as marked a degree as the left arm, but enough to make motion in bed, unassisted, impossible. At one time there was difficulty in swallowing, and for a short period breathing was almost entirely diaphragmatic. The patient's condition remained about the same for two months, after which there was a slow but steady improvement, so that at the end of the third month she was able to sit up for a short time each day, and in December, five months from the onset of the trouble, she was able to move about with but little assistance, and was taken home. The paralytic symptoms referred to in the right arm and legs had by this time practically disappeared, but the left arm was still very helpless. The swelling in the neck was practically the same as when first noticed.

Later History.—The patient was not again seen until thirteen months later, during which time, aside from the use of the Thomas collar, no special treatment had been carried out. At the time of this examination the improvement in the patient's general condition was most marked. She moved about with perfect ease, and, aside from the stiffness of the neck and some impairment in the use of the left arm, she seemed well. Extension of the neck was entirely restricted, so that in order to raise the chin the whole body was bent backward. Rotation was also entirely restricted, while flexion was more free, it being possible to lower the chin to the chest. On each side of the neck, over the tranverse processes, was distinct thickening. In the left arm all motions were limited, especially those in which the shoulder muscles were used. The fingers were flexed, apparently owing to the contraction of the palmar fascia and the flexor tendons. The sensation of the hand and arm was normal. At the present time the patient's condition is practically the same as at the time of this last note. She is able to be about at her work, but there has been no change in the condition of the neck or arm.

Case 2.—Infectious arthritis of the cervical spine with paralysis of the arms due to nerve root pressure.

Patient.—Mr. E., aged 38, was seen in January, 1900, having had rheumatism for many years, but no one part being especially involved and the disease never being severe enough to confine him at home for more than short periods. For the year previous to the first examination the patient had had trouble with the shoulder, which had gradually extended to the neck. At the time of the examination the entire cervical spine was actually inflamed, all motions being extremely painful. At that time the left arm was much limited in its function; not only was it painful but there was a partial paralysis of the muscles. Under observation the paralysis of the arm increased until it was practically entirely helpless, it being necessary to raise the hand and place it in whatever position was desired. The right arm became considerably involved, but less markedly so than the left.

Diagnosis.—The condition represented an infectious arthritis (the so-called "rheumatism"), which had involved the cervical spine, and with the periarticular swelling the nerve roots had been constricted until a partial paralysis of the arms resulted.

Treatment and Course of Disease.—Under good hygiene, having the patient live out of doors, much as would be insisted on in a tuberculous case, with a Thomas collar to steady the head and neck, and with rational drug treatment, the patient gradually recovered, and in six months had regained the full function of the arm, with only slight remaining limitation of motion in the neck. With the general instruction as to hygiene the patient has remained well with no further trouble.

Case 3.—Hypertrophic arthritis of the cervical spine with temporary paralysis of the shoulder and arm muscles.

Patient.—G. H., a man, aged 32, consulted me in September, 1898. He was a professor in one of our large universities. His family history was excellent; he had been well previous to January, 1897, when he broke down nervously. He went abroad, and soon after this stiffness of the neck and shoulders developed, not enough, however, to prevent his going about. Soon after this, numbness developed in the left arm, with marked loss of power, and later the right arm was similarly involved, only not so severely. The condition improved slightly, and then remained about as it was at the time of the examination. At that time there was a moderate rounded curve involving the upper dorsal cervical regions of the spine. This portion of the spine was rigid. The shoulders were drooped forward and there was atrophy of the muscles of the chest, shoulders, and upper back. On attempted motion there was spasm of the muscles about the shoulders and upper spine. The legs were normal and there was no change in the reflexes. There was marked loss of power in the left arm, with some numbness, and there was a tendency to the same condition on the right side.

Treatment.—This consisted almost wholly of support of the cervical spine, which was used for a few months and was followed by entire recovery, except for slight permanent limitation of motion of the neck.

Case 4.—Hypertrophic arthritis of the cervical spine with arm symptoms.

Patient.—Mary S., aged 35, came to the Carney Hospital about three years ago because of trouble with the back and neck. The history as given was that a few months previously she made a change in the underclothing and took cold. This was followed by pain in the neck which prevented her from being about. At that time the slightest motion of the head was extremely painful. No other joints were involved. The arms for some time could not be used freely, the left one being worse. Under general treatment, with fixation of the neck, the patient gradually improved, so that at the present time, except for the rigidity of the upper dorsal and lower half of the cervical spine, she is well.

Case 5.—Hypertrophic arthritis with irritation of the intercostal nerves causing the so-called intercostal neuralgia.

Patient.—Mr. R., was first seen in August, 1900, because of a persistent pain in the left side, a condition which had been present for nearly a year, which had not yielded to drugs or other forms of treatment, and which had been so persistent and interfered so much with the ordinary activities that the patient, who was an active business man, had practically decided to retire from all active life. The back was rounded forward, there was limitation of motion in the lower dorsal and lumbar regions, the motions of the spine increased the pain along the line of the intercostal nerves, and sudden movements, such as coughing or sneezing, increased it markedly. The case was one of hypertrophic arthritis of the dorsal spine with pressure on and irritation of the intercostal nerves.

Treatment.—A jacket was applied holding the body erect and relieving the irritation of the dorsal spine consequent on motion, with immediate relief and with entire recovery in a few months. The patient remained well after that time.

SACROILIAC LESIONS

Undoubtedly the most common joints to show lesions of any sort are those between the ilia and the sacrum, since these joints are supported entirely by muscles and ligaments, and consequently anything which interferes with the tone of those may lead to strain of the joints or sag or displacement of the bones; and since the sacral plexus of nerves passes directly over these joints, it is not to be wondered at that in many of such cases pain is present, due to the irritation of some portion of this plexus. Undoubtedly more of the cases of sciatica are due to this than to any other one thing, and in such cases not only may pain be present, but the continued irritation of the nerve may lead to an exaggeration of the reflexes, or, if the pressure is severe enough, actual paralysis may exist.

The location of such pain naturally varies and depends on the amount of or the portion of the plexus that is irritated. It may be quite general and extend the length of the leg, or it may be confined to definite areas, there being areas of hyperesthesia or anesthesia. The symptoms will be increased by motion in the affected joint, and are almost invariably worse at night or when the body is for long in the recumbent position, during which time the supporting muscles relax. With this relaxation the lumbar spine is allowed to sag and thus drags the upper part of the sacrum backward, producing strain of the joint with resulting pain, either local or referred.

The increase in the pain in sciatica when the patient is in bed and the common custom in such cases of sleeping in a chair in the semierect position is to be explained in this way.

Case 6.—Weakness of the sacroiliac joints following injury and acute illness, with ultimate displacement of the sacrum, this causing obstinate sciatica.

Patient.—Miss S., had been an invalid for fifteen years, suffering much from sciatica, with backache and neuritis of the right arm. The history is that seventeen years previous to her being seen she fell over some stairs, striking the lower part of the back, being quite lame for a short time, with considerable pain referred to the lower back. Two years later she had an acute illness, with a high temperature which lasted for a few days. After this a severe backache developed, with pain in the right leg, and ever since then the patient had pain in the leg, called sciatica, with continued backache, and in practically all of that time was an invalid. The menstrual period was attended with marked increase of pain.

Examination.—The patient was in extremely poor general condition, with extreme tenderness over the region of the sacrum and especially the sacroiliac articulations. She was able to walk only with the use of a cane, and any motion of the lumbar spine or of the thighs which produced motion or strain of the pelvic joints caused an increase of the pain. The straight leg raising, in which the hamstring muscles are made tight, was exceedingly painful and allowed to only a few degrees. There was much pain referred to the arms and hands, increased or relieved by posture. The history suggested weakening of the sacroiliac joints at the time of the injury, with a relaxation of the joints at the time of the acute illness, and the displacement of the sacrum backward at that time, the sciatica representing the irritation of the sacral plexus consequent on the displacement of the bone. The pain of the arm, neuritis, was due to the extreme forward position of the shoulder, a part of the weakened condition, and the crowding of the brachial plexus against the ribs by the head of the humerus.

Treatment and Course of Disease.—The sacroiliac joints were manipulated under an anesthetic, the sacrum was forced into place with a marked temporary increase of the sciatic pain, but with a marked relief almost at once in the general nervous tension. With the aid of supports, consisting first of the adhesive plaster strapping, later on of the pelvic belt and a flexible back brace, the patient was able to get about, and has gradually regained her health, with nearly the normal return of the functions of the body. With the change in the posture and the holding of the shoulder back the pain in the arms has disappeared.

Case 7.—Obstinate sciatica due to displacement of the sacrum.

Patient.—Mr. A., aged 19, midshipman at Annapolis, had been under active treatment and away from his duties for the past ten months because of severe sciatica in the right leg. The trouble came on suddenly and persisted and caused much suffering ever since. In that time the patient had all sorts of treatment, including injections along the nerve sheath, massage, long periods of rest, drugs, etc., with no improvement.

Examination.—The patient stood with the muscles of the spine and thighs all in marked spasm, with the body listed to the left, with forward bending and side bending markedly limited, with the spinal motions much more free when sitting, in which position the hamstring muscles are relaxed, with the hip motions free except the straight leg raising, this being almost entirely limited on the left side, and considerably limited on the right, with marked tenderness over the sacroiliac articulations. The case was one of backward displacement of the sacrum on the left side, with the sciatica resulting from the irritation of the sacral plexus.

Treatment and Course of Disease.—The patient was admitted to the hospital and the joints manipulated, but the replacement of the bone could not be accomplished at that time. Plaster-of-Paris jackets were applied and other forms of spinal support without relief, and three weeks later another manipulation was attempted, this time with a distinct slip of the bone into place, with immediate relief of the sciatica. A few days later the patient left the hospital, and on the way across the city the bone slipped slightly out of place, with an instant return of the sciatic pain, which was at once corrected by the application of a brace which forced the bone back into place. Since then, with the use of a pelvic belt, there has been no further difficulty. There has been no return of the pain.

Case 8.—Severe sciatica due to displacement of the sacrum and with severe brachial neuralgia due to the forward position of the shoulder.

Patient.—Miss W., aged 28, was seen four years ago because of severe sciatica which had been present off and on for four years. In that time the patient had had much backache and the sciatica had been so constant, making sleep difficult, that the patient had become very nervous and was in a marked neurasthenic state.

Treatment and Course of Disease.—From the attitude assumed in standing and the motion allowed, together with the tenderness over the sacroiliac joints, a lesion of these joints was diagnosed and fixation apparatus applied, but entirely without relief. Manipulation was then attempted and resulted in a marked slip of the sacrum into place, with instant relief to the pain, with an immediate ability to go about, with a rapid disappearance of the neurasthenic symptoms, and an entire relief of symptoms ever since. A belt was worn for a few months following the manipulation. The patient also complained much of pain in the arms, chiefly the right, which interfered much with all function and which caused much suffering at night. This persisted after the sciatica was relieved by the manipulation and in an attempt to control it she was at one time confined to bed for three months under the care of most competent physicians, but without relief. Recognizing later that the pain in the arm was due to the crowding of the brachial plexus by the head of the humerus in the forward position and that this forward position was held by adhesions inly slow, and it is in this type at times that the thickening which causes the pressure on the nerves is so marked and so dense that complete restoration of the function may never occur.

The following cases are reported as illustrative of these forms of disease:

Case 1.—Hypertrophic arthritis of the cervical spine resulting in sufficient pressure on the cervical and brachial plexuses to cause paralysis of the arms.

Patient.—Mrs. McC., aged 58, by occupation a nurse, had always been well and actively engaged in her work until the present sickness. In July, 1893, she was caught in a thundershower and her clothing was wet through. The next morning she complained of pain in the neck, with some tenderness in the upper part of the chest. There was no cough or expectoration. The pain in the neck increased in severity very rapidly, until the slightest motion caused the most intense suffering, and because of this she was admitted to the Good Samaritan Hospital.

Examination.—At the time of the first examination she was evidently suffering a good deal. The head was held a little to one side, the chin to the left, the shoulders drawn up, and all motions were most carefully guarded by muscular contraction. Any attempt at motion caused great pain. None of the other joints were in the last involved, and aside from this local condition the patient seemed well.

Treatment and Course of Disease.—For the first week or two the patient was kept quiet in bed, and the various rheumatic remedies freely given with very little if any effect. After this a Thomas collar was applied for more complete fixation, and following this light-weight extension was used. These gave some relief, but neither could be used continuously because of the nervousness of the patient, so that the two applications were used alternately, each being worn for a few hours. In three or four weeks after the beginning of the attack a swelling appeared in the right side of the neck. This was about the size of a small lemon, and was apparently connected with the spine. At the same time numbness of the left arm was noticed, with some impairment of motion, and this condition continued and increased until the arm was almost entirely helpless. The right arm and both legs also became involved, never in as marked a degree as the left arm, but enough to make motion in bed, unassisted, impossible. At one time there was difficulty in swallowing, and for a short period breathing was almost entirely diaphragmatic. The patient's condition remained about the same for two months, after which there was a slow but steady improvement, so that at the end of the third month she was able to sit up for a short time each day, and in December, five months from the onset of the trouble, she was able to move about with but little assistance, and was taken home. The paralytic symptoms referred to in the right arm and legs had by this time practically disappeared, but the left arm was still very helpless. The swelling in the neck was practically the same as when first noticed.

Later History.—The patient was not again seen until thirteen months later, during which time, aside from the use of the Thomas collar, no special treatment had been carried out. At the time of this examination the improvement in the patient's general condition was most marked. She moved about with perfect ease, and, aside from the stiffness of the neck and some impairment in the use of the left arm, she seemed well. Extension of the neck was entirely restricted, so that in order to raise the chin the whole body was bent backward. Rotation was also entirely restricted, while flexion was more free, it being possible to lower the chin to the chest. On each side of the neck, over the tranverse processes, was distinct thickening. In the left arm all motions were limited, especially those in which the shoulder muscles were used. The fingers were flexed, apparently owing to the contraction of the palmar fascia and the flexor tendons. The sensation of the hand and arm was normal. At the present time the patient's condition is practically the same as at the time of this last note. She is able to be about at her work, but there has been no change in the condition of the neck or arm.

Case 2.—Infectious arthritis of the cervical spine with paralysis of the arms due to nerve root pressure.

Patient.—Mr. E., aged 38, was seen in January, 1900, having had rheumatism for many years, but no one part being especially involved and the disease never being severe enough to confine him at home for more than short periods. For the year previous to the first examination the patient had had trouble with the shoulder, which had gradually extended to the neck. At the time of the examination the entire cervical spine was actually inflamed, all motions being extremely painful. At that time the left arm was much limited in its function; not only was it painful but there was a partial paralysis of the muscles. Under observation the paralysis of the arm increased until it was practically entirely helpless, it being necessary to raise the hand and place it in whatever position was desired. The right arm became considerably involved, but less markedly so than the left.

Diagnosis.—The condition represented an infectious arthritis (the so-called "rheumatism"), which had involved the cervical spine, and with the periarticular swelling the nerve roots had been constricted until a partial paralysis of the arms resulted.

Treatment and Course of Disease.—Under good hygiene, having the patient live out of doors, much as would be insisted on in a tuberculous case, with a Thomas collar to steady the head and neck, and with rational drug treatment, the patient gradually recovered, and in six months had regained the full function of the arm, with only slight remaining limitation of motion in the neck. With the general instruction as to hygiene the patient has remained well with no further trouble.

Case 3.—Hypertrophic arthritis of the cervical spine with temporary paralysis of the shoulder and arm muscles.

Patient.—G. H., a man, aged 32, consulted me in September, 1898. He was a professor in one of our large universities. His family history was excellent; he had been well previous to January, 1897, when he broke down nervously. He went abroad, and soon after this stiffness of the neck and shoulders developed, not enough, however, to prevent his going about. Soon after this, numbness developed in the left arm, with marked loss of power, and later the right arm was similarly involved, only not so severely. The condition improved slightly, and then remained about as it was at the time of the examination. At that time there was a moderate rounded curve involving the upper dorsal cervical regions of the spine. This portion of the spine was rigid. The shoulders were drooped forward and there was atrophy of the muscles of the chest, shoulders, and upper back. On attempted motion there was spasm of the muscles about the shoulders and upper spine. The legs were normal and there was no change in the reflexes. There was marked loss of power in the left arm, with some numbness, and there was a tendency to the same condition on the right side.

Treatment.—This consisted almost wholly of support of the cervical spine, which was used for a few months and was followed by entire recovery, except for slight permanent limitation of motion of the neck.

Case 4.—Hypertrophic arthritis of the cervical spine with arm symptoms.

Patient.—Mary S., aged 35, came to the Carney Hospital about three years ago because of trouble with the back and neck. The history as given was that a few months previously she made a change in the underclothing and took cold. This was followed by pain in the neck which prevented her from being about. At that time the slightest motion of the head was extremely painful. No other joints were involved. The arms for some time could not be used freely, the left one being worse. Under general treatment, with fixation of the neck, the patient gradually improved, so that at the present time, except for the rigidity of the upper dorsal and lower half of the cervical spine, she is well.

Case 5.—Hypertrophic arthritis with irritation of the intercostal nerves causing the so-called intercostal neuralgia.

Patient.—Mr. R., was first seen in August, 1900, because of a persistent pain in the left side, a condition which had been present for nearly a year, which had not yielded to drugs or other forms of treatment, and which had been so persistent and interfered so much with the ordinary activities that the patient, who was an active business man, had practically decided to retire from all active life. The back was rounded forward, there was limitation of motion in the lower dorsal and lumbar regions, the motions of the spine increased the pain along the line of the intercostal nerves, and sudden movements, such as coughing or sneezing, increased it markedly. The case was one of hypertrophic arthritis of the dorsal spine with pressure on and irritation of the intercostal nerves.

Treatment.—A jacket was applied holding the body erect and relieving the irritation of the dorsal spine consequent on motion, with immediate relief and with entire recovery in a few months. The patient remained well after that time.

SACROILIAC LESIONS

Undoubtedly the most common joints to show lesions of any sort are those between the ilia and the sacrum, since these joints are supported entirely by muscles and ligaments, and consequently anything which interferes with the tone of those may lead to strain of the joints or sag or displacement of the bones; and since the sacral plexus of nerves passes directly over these joints, it is not to be wondered at that in many of such cases pain is present, due to the irritation of some portion of this plexus. Undoubtedly more of the cases of sciatica are due to this than to any other one thing, and in such cases not only may pain be present, but the continued irritation of the nerve may lead to an exaggeration of the reflexes, or, if the pressure is severe enough, actual paralysis may exist.

The location of such pain naturally varies and depends on the amount of or the portion of the plexus that is irritated. It may be quite general and extend the length of the leg, or it may be confined to definite areas, there being areas of hyperesthesia or anesthesia. The symptoms will be increased by motion in the affected joint, and are almost invariably worse at night or when the body is for long in the recumbent position, during which time the supporting muscles relax. With this relaxation the lumbar spine is allowed to sag and thus drags the upper part of the sacrum backward, producing strain of the joint with resulting pain, either local or referred.

The increase in the pain in sciatica when the patient is in bed and the common custom in such cases of sleeping in a chair in the semierect position is to be explained in this way.

Case 6.—Weakness of the sacroiliac joints following injury and acute illness, with ultimate displacement of the sacrum, this causing obstinate sciatica.

Patient.—Miss S., had been an invalid for fifteen years, suffering much from sciatica, with backache and neuritis of the right arm. The history is that seventeen years previous to her being seen she fell over some stairs, striking the lower part of the back, being quite lame for a short time, with considerable pain referred to the lower back. Two years later she had an acute illness, with a high temperature which lasted for a few days. After this a severe backache developed, with pain in the right leg, and ever since then the patient had pain in the leg, called sciatica, with continued backache, and in practically all of that time was an invalid. The menstrual period was attended with marked increase of pain.

Examination.—The patient was in extremely poor general condition, with extreme tenderness over the region of the sacrum and especially the sacroiliac articulations. She was able to walk only with the use of a cane, and any motion of the lumbar spine or of the thighs which produced motion or strain of the pelvic joints caused an increase of the pain. The straight leg raising, in which the hamstring muscles are made tight, was exceedingly painful and allowed to only a few degrees. There was much pain referred to the arms and hands, increased or relieved by posture. The history suggested weakening of the sacroiliac joints at the time of the injury, with a relaxation of the joints at the time of the acute illness, and the displacement of the sacrum backward at that time, the sciatica representing the irritation of the sacral plexus consequent on the displacement of the bone. The pain of the arm, neuritis, was due to the extreme forward position of the shoulder, a part of the weakened condition, and the crowding of the brachial plexus against the ribs by the head of the humerus.

Treatment and Course of Disease.—The sacroiliac joints were manipulated under an anesthetic, the sacrum was forced into place with a marked temporary increase of the sciatic pain, but with a marked relief almost at once in the general nervous tension. With the aid of supports, consisting first of the adhesive plaster strapping, later on of the pelvic belt and a flexible back brace, the patient was able to get about, and has gradually regained her health, with nearly the normal return of the functions of the body. With the change in the posture and the holding of the shoulder back the pain in the arms has disappeared.

Case 7.—Obstinate sciatica due to displacement of the sacrum.

Patient.—Mr. A., aged 19, midshipman at Annapolis, had been under active treatment and away from his duties for the past ten months because of severe sciatica in the right leg. The trouble came on suddenly and persisted and caused much suffering ever since. In that time the patient had all sorts of treatment, including injections along the nerve sheath, massage, long periods of rest, drugs, etc., with no improvement.

Examination.—The patient stood with the muscles of the spine and thighs all in marked spasm, with the body listed to the left, with forward bending and side bending markedly limited, with the spinal motions much more free when sitting, in which position the hamstring muscles are relaxed, with the hip motions free except the straight leg raising, this being almost entirely limited on the left side, and considerably limited on the right, with marked tenderness over the sacroiliac articulations. The case was one of backward displacement of the sacrum on the left side, with the sciatica resulting from the irritation of the sacral plexus.

Treatment and Course of Disease.—The patient was admitted to the hospital and the joints manipulated, but the replacement of the bone could not be accomplished at that time. Plaster-of-Paris jackets were applied and other forms of spinal support without relief, and three weeks later another manipulation was attempted, this time with a distinct slip of the bone into place, with immediate relief of the sciatica. A few days later the patient left the hospital, and on the way across the city the bone slipped slightly out of place, with an instant return of the sciatic pain, which was at once corrected by the application of a brace which forced the bone back into place. Since then, with the use of a pelvic belt, there has been no further difficulty. There has been no return of the pain.

Case 8.—Severe sciatica due to displacement of the sacrum and with severe brachial neuralgia due to the forward position of the shoulder.

Patient.—Miss W., aged 28, was seen four years ago because of severe sciatica which had been present off and on for four years. In that time the patient had had much backache and the sciatica had been so constant, making sleep difficult, that the patient had become very nervous and was in a marked neurasthenic state.

Treatment and Course of Disease.—From the attitude assumed in standing and the motion allowed, together with the tenderness over the sacroiliac joints, a lesion of these joints was diagnosed and fixation apparatus applied, but entirely without relief. Manipulation was then attempted and resulted in a marked slip of the sacrum into place, with instant relief to the pain, with an immediate ability to go about, with a rapid disappearance of the neurasthenic symptoms, and an entire relief of symptoms ever since. A belt was worn for a few months following the manipulation. The patient also complained much of pain in the arms, chiefly the right, which interfered much with all function and which caused much suffering at night. This persisted after the sciatica was relieved by the manipulation and in an attempt to control it she was at one time confined to bed for three months under the care of most competent physicians, but without relief. Recognizing later that the pain in the arm was due to the crowding of the brachial plexus by the head of the humerus in the forward position and that this forward position was held by adhesions in the coracoid bursa, I manipulated the shoulder so that the adhesions were freed and the erect shoulder position could be maintained. This was followed by distinct relief at once, with a gradual disappearance of the "nerve" pain, until the patient was entirely well. A light shoulder-brace was worn to hold the shoulders back for several months.

THE SHOULDER MALPOSITIONS AND THEIR EFFECT ON THE BRACHIAL PLEXUS

With the drooping of the shoulder forward the scapula rotates so that its axis is directed forward and outward at the top, and with this the glenoid cavity is lowered so that the shoulder is finally supported by the humerus resting against the ribs. In this position, naturally, the axillary structures are compressed between the humerus and the ribs. If the patient is stout, all of the structures are compressed, resulting frequently in disturbances of circulation in the hands and arms as well as pain along the distribution of the branches of the brachial plexus. If the patient is thin the ulnar nerve, which is most posterior, is commonly pressed on and the frequent ulnar neuritis seen in such cases is in this way explained. If, in addition, the costume is so arranged that the fat tissue under the axilla and below the bust is crowded up under the arm, the compression of the axillary structures by the arm is increased.

Occupation or attitude which increases this forward position naturally increases the pain and at times leads to an entire inability to use the hand, seen most strikingly in the so-called "writer's cramp."

Such being the case, naturally the correction of the position of the shoulder so that the axillary structures are no longer compressed and the training of the individual to use the body erect rather than drooping are of the utmost importance for the cure of such conditions. If in such cases the forward flexion of the upper part of the scapula makes it impossible to extend the shoulder fully, as is often the case, an operation for the correction of this should be performed, as until this is corrected real cure can not take place.

Case 9.—Marked stoop shoulder with an extreme degree of brachial neuritis and writer's cramp.

Patient.—A man, aged 30, tall, of slender build, always having stooped considerably, had, for a year previous to the time of the first consultation in July, 1908, suffered much from pain in the right shoulder and arm, always made worse by writing, and being a journalist by profession, this seriously interfered with his occupation. The condition had become so bad that all use of the hand had to be avoided, and the patient had become much broken in health as the result of the constant pain.

Examination.—At the time of the examination the forward position of the shoulder was most evident, and the fact that the brachial neuralgia could be increased by increasing the forward position was demonstrated. As the result of the long-standing forward position of the shoulder, which had undoubtedly occurred during childhood, the scapulæ were flexed forward, so that the erect position of the shoulder was impossible.

Treatment.—Accordingly, after some entirely unsuccessful experimentation with braces, an operation was performed consisting of the removal of the upper part of the scapula, so that the shoulders could then be carried erect; and with this, with the temporary use of braces, the neuralgia and pain in the arm gradually ceased, until at the present time the patient is practically well.

Case 10.—*Patient.*—A young woman, aged 30, a professional violinist, sought relief from pain in the right hand, always brought on in connection with her violin-playing, which had become so marked that the question of giving up her profession had been forced on her. The pain was all referred to the hand, with nothing locally to show for it, and in the examination it was found that the patient within the past year had changed the style of bowing, using the arm more horizontally than previously, and that the pain was developed only when the bow was drawn to its extreme length, in which position the shoulder was carried markedly forward. When the shoulder reached a certain point the pain developed so markedly that it was difficult for the patient to hold the bow.

Treatment.—After some consideration of the problem, a light shoulder brace was applied which prevented this extreme forward position of the shoulder, and with this, and with the training of the patient to use the shoulder rightly, the pain and disability have been entirely controlled. (See also Cases 6 and 8.)

THE EFFECT OF WEAKNESS OF THE PELVIC JOINTS ON THE GAIT IN PARALYTIC CONDITIONS

In nearly all of the paralytic conditions the body is inclined forward in walking, and frequently the knees are used flexed. Not only do both of these positions favor strain of the sacroiliac joints, but neither position can be for long maintained by any one, irrespective of the paralysis, without strain of these joints resulting. If these joints are strained and become relaxed, since the pelvis represents the structural base of the body to which all of the trunk and thigh muscles are attached, obviously locomotion becomes difficult, because these trunk and thigh muscles naturally work at a disadvantage and the gait is peculiar simply because of the joint strain, entirely apart from the paralysis. Recognition of this fact and provision of proper support for the pelvic joints frequently results in marked improvement in the gait and the disability so commonly present in these paralytic conditions can frequently be strikingly modified. The joint protection does not, of course, change or cure the paralysis, but frequently lessens the disability to a marked degree, and should be definitely recognized in the treatment of these conditions.

Case 11.—*Patient.*—Mr. J., aged 41, sought treatment because of trouble with the feet, giving the history that for some months he had been growing increasingly more helpless, having difficulty in keeping his balance, difficulty in walking in the dark, and much unsteadiness on turning quickly, with some drag of the toes. The case was one of locomotor ataxia, with entire absence of the reflexes, disturbed reaction of the pupil, and in connection with this a distinct flat foot, with a well-marked strain of both sacroiliac joints.

Treatment and Course of Disease.—A pair of foot plates were given to relieve the foot strain, the adhesive plaster strapping was applied to the lower back and a pelvic belt ordered to increase the pelvic stability. At the time of the second visit the patient reported himself as being markedly improved and as being able to walk much more freely. The belt was applied and this continued in connection with the foot plates, with continued improvement over the condition which was present at the time of the first visit. The apparatus does not, of course, change in any sense the cord lesion, but by relieving the mechanical strain caused by the weakness of the pelvic joints and the feet, the disability, which is the natural result of his cord lesion, is much less marked and the patient correspondingly elated.

Case 12.—Lateral sclerosis of the spinal cord.

Patient.—Mrs. W., aged 57, had been growing progressively more helpless. The progress has been the natural progress of such a case, with gradually increasing disability. For the past few years there had been an increasing difficulty in the control of the urine. At the time of the examination it was perfectly obvious that in connection with the spinal cord lesion the pelvic joints were markedly strained and as the result of the chronic strain the sacrum was slightly displaced.

Treatment and Course of Disease.—At that time, as several patients with similar joint lesions had been markedly relieved of troublesome frequent micturition in connection with the treatment of the joints, manipulation of the sacroiliac joint was advised in the hope that the difficulty with the micturition would be controlled in her case, and hoping at the same time that the gait could be improved. Following the manipulation there was distinct improvement in the gait, so that the patient, who had previously been unable to walk across the room without assistance and unable to go over the stairs, was able to walk across the room with comparatively little unsteadiness and was able, with the assistance of the bannisters, to go up and down stairs. The character of the gait was curiously changed following the manipulation, and from the usual dragging of the toe seen in such cases the gait at first was more like the gait of the high-stepping horse, the knees being drawn up markedly as the step was taken forward. The patient during the past year has worn a belt about the pelvis and has had various forms of supports to relieve the strain on the sacroiliac joints and in that time has been more active than it was possible for her to be in the few years previous. The case, of course, represents a spinal cord lesion in which the prognosis is presumably hopeless, but with distinct improvement resulting from the relief of the joint strain which is a necessary result of the use of the body with such a paralytic condition.

CIRCULATORY DISTURBANCES IN THE NEURASTHENIC OR IRRITABLE SPINE

In any condition in which the spinal muscles are weakened the body must droop or be inclined forward during use. Not only this, but if the body is used in the forward position for long the muscles become fatigued, and if the use is continued they necessarily are weakened, so that a still further tendency for the spine to droop exists. The posture with the weakened muscles must result in strain of the various spinal ligaments, especially the interspinous, a condition which shows by the painful points along the spine so commonly found in such cases.

The spinal muscles receive their blood supply in the lumbar region from the lumbar arteries and in the dorsal region from the intercostal arteries. Branches are given off from these vessels which go directly into the spinal canal on a level with each vertebra. If for any reason the muscles of the spine are weak so that there is not the usual amount of blood supply to the muscles, it is probable that the flow of blood through these spinal branches is also not normal, and if this is the case it must mean that the spinal cord is less well supplied with blood than normal. It is possible also that the interference with the normal motions of the spine which must result if the muscles are weakened results also in venous and lymphatic stasis, so that a congestion exists which also interferes with the nutrition of the spinal cord.

These are conditions which naturally can not be proved anatomically, and which must be matters of speculation, but as a proposition it seems reasonable, and the marked change in the neurasthenic elements in many of these cases as soon as the spinal strain is relieved so that the free action of the trunk is possible would seem to bear out such a supposition. If such a condition does exist it should emphasize the importance of training our patients in proper poise, not simply because of esthetic considerations, but because by so doing the function of all the organs will be carried on more easily, and especially because the circulation in the spinal cord will be more free and the nerve centers which control the various structures may be better nourished and consequently possess greater vigor.

THE REAL SIGNIFICANCE OF THE KERNIG SIGN

The limitation of the straight leg raising when the patient is lying on the back or when sitting has been used, since it was originally described, as a common test for sciatica and other conditions in which the nerves have been more or less involved. The limitation in this movement is brought about by spasm of the hamstring muscles, and as these muscles, together with the lumbar muscles, are the ones which are concerned in the protection of the sacroiliac joints, it seems probable to me that the "sign," as it is commonly designated, is almost always, if not always, simply an indication of strain or disease in these joints. I have never seen the "sign" present unless other tests were present confirmatory of the joint lesion, and since a large proportion of the cases of sciatica are due to the irritation of the sacral plexus in connection with the lesion of the sacroiliac joint, and since in many of the paralytic conditions the sacroliac joints must be strained, the presence of the sign in these cases is easily explained. It seems probable to me that the "sign" is chiefly of value as indicating joint weakness and possesses little other significance.

Such are a few of the subjects which I feel should be fully understood by both the neurologist and the orthopedic surgeon. Our function is to prevent as well as to control disease, and both of these elements are involved in the problems which, because of the small amount of time available, have been so briefly presented.

If we can train our patients to use their bodies rightly not only will there be less waste of both nervous and physical force, but the suffering which at times comes because of the faulty use will not occur. If the conditions here decribed are recognized, the relief of the suffering as well as the control of the disease become matters of much greater certainty than they have been in the past.

In approaching our patients not only should we consider the pathology concerned in their troubles, but also we should endeavor to understand fully the anatomic relations of the parts and the possible effect of imperfect mechanical adjustment.

372 Marlboro Street.

ABSTRACT OF DISCUSSION

Dr. T. Diller, Pittsburg, Pa.: I was entirely ignorant of the disease of the sacroiliac joints until my attention was directed to them by Dr. David Silver, an orthopedic surgeon, two years ago. Since then I have been able to recognize three of these cases, and I am sure they would have been obscure to me without the assistance he gave me. In one case, a woman presented many neurasthenic signs, such as pain along the spine, and there was a certain pain which was different from anything I had noted. She stated that the pain came in the neighborhood of the sacrum about the buttocks very suddenly at night when she would turn in bed. It was not the sort of pain that one encounters in the neurasthenic. Dr. Silver demonstrated distinct looseness in the sacroiliac joint, applied a proper bandage, and the patient was relieved. A medicolegal case I saw recently was another of this sort. The patient was a young woman of about 25 who was riding in a railway train on a so-called reclining chair, riding at night with her feet up on the chair in front of her. The train came into a collision, and she was so seated that she was doubled up like a jack knife, her feet being brought in contact with her head, so that there was a very forced doubling of the joint at the hips. Now, this patient complained of a number of neurasthenic symptoms: great pain about the region of the sacrum and running down the back of the thigh, as Dr. Goldthwait has mentioned. There was not the ordinary spinal tenderness that we so frequently meet in these cases, and a careful examination of this patient was made with the assistance of Dr. Silver; he demonstrated looseness of this joint by having the patient raise her thigh and put it down while she was in a standing position, and we could distinctly feel crepitus. My experience is limited in this field, yet this is a very important matter, and I am now on the lookout for these cases of sacroiliac disease. I have seen a number of cases of stiffness of the spine, and they are quite obvious if one is on the lookout for them, and I think the only chance of missing them is by not thinking of this condition.

Dr. Robert L. Pitfield, Germantown, Philadelphia: I recall two cases of sacroiliac disease following labor, one of which yielded to strapping of the back, but I was compelled in another case to apply a belt and bind the woman, and she suffers even now from pain, particularly on rising from bed in the morning.

Dr. William A. Jones, Minneapolis: In many of these cases that Dr. Goldthwait has described, in which there is actual nerve irritation, is it due to changes in position of the vertebra, and is it probable or likely that aside from the sacroiliac joint that the position of the other vertebræ can be changed at all? This, I think, is a difficult question for neurologists to appreciate fully.

Dr. J. E. Goldthwait, Boston: I do not believe that the vertebræ change their position very much. The cervical vertebræ, I am sure, can be slipped a little bit out of place, and I am inclined to think that is more common than we generally suppose. I do not believe that the dorsal and lumbar vertebræ change their places much unless there is severe trauma. I think that the last lumbar vertebra can be slipped forward on the sacrum much more commonly than is generally supposed. Pregnancy is the most common source of the relaxation of the joint, but that is rarely productive of pain such as a neurologist would note, because the relaxation is so soft and the tissues are all so much relaxed that the nerves and all the tissues are stretched, and there is comparatively little pressure. If the pain continues and the stability does not return with the use of a belt or proper support, I should suspect that the bones were not in quite the original position, because usually when they are in the normal position Nature is ready with the muscles and ligaments to hold them in that position.

In so-called cases of railroad spine, examine the sacroiliac joint. I never saw a railroad spine which was not really a sacroiliac joint sprain. If you will read the books on this condition you will find that the profession is not in accord as to what it is, and if you will study the mechanics of the spine and the nature of the accidents commonly productive of railroad spine, the wonder is not that people have the sacroiliac joint strains which lead to the weak backs and nervous backs, etc., but that they all do not get it. It is the sudden stopping and the jerking of the body forward or backward, with the muscles off their guard, that causes the trouble.

THE SURGICAL ASPECTS OF CEREBRAL DECOMPRESSION

WITH REMARKS ON THE ETIOLOGY AND CERTAIN MANIFESTATIONS OF PAPILLEDEMA *

CHARLES H. FRAZIER, M.D.
Professor of Clinical Surgery, University of Pennsylvania; Surgeon to the University Hospital
PHILADELPHIA

Though having had the privilege of presenting a paper on a kindred subject to this Section but a year ago, your Secretary has been kind enough to invite me to participate in your transactions again and has assigned to me the topic of the "Surgical Aspects of Cerebral Decompression." Rather than to any contribution of my own, I attribute this opportunity chiefly to the fact that one of your members, Dr. de Schweinitz, has been so closely identified with all the neurologic cases in my clinic, and in this connection I should like to emphasize the importance not only from the standpoint of the patient's welfare, but as a means of accurate and reliable observation of the closest coöperation, between the ophthalmic and neurologic staff on the one hand and the surgical on the other. An exhaustive study of the case before operation at the hands of the experienced neurologist and ophthalmologist, their observations of the lesion at the time of the operation, and their continued studies of the after-effects serve as a safeguard against surgical blunders and guarantee accuracy and reliability in the published records.

Of all the phases of papilledema, none has aroused more interest and discussion than the etiology. The conditions in which it has been associated are well known, notably tumor, hydrocephalus, and more recently traumatic lesions. It has been assumed by some that the most important factor in its pathogenesis is increased intracranial tension. Plausible as this theory is, it is not borne out by experimental evidence, at least with one or possibly two exceptions experimenters have thus far failed to produce a papilledema solely by increasing intracranial tension. Because of the existing obscurity as to its etiology, I have with the collaboration of Drs. de Schweinitz, Sweet, Prime and Holloway, made a series of observations in the Laboratory of Experimental Surgery of the University of Pennsylvania, for the purpose of determining for ourselves whether increased tension did or did not play any part. The experiments will be published in detail together with others bearing on the subject of decompression so that I shall allude here only to the essential features.

Two methods of increasing intracranial tension were employed, the wet and the dry. By the dry method, a small rubber bag was introduced beneath the skull after splitting the dura and retained in place by a special appliance. By elevating the reservoir, the bag was distended with water to the point of maximum tolerance. By the wet method, normal saline solution was introduced through a small canula screwed into the skull; the dura was opened and the rate of flow was regulated by elevating or lowering the reservoir. In some cases, the fluid was introduced into the pretentorial space, in some into the subtentorial space. The degree of intracranial tension was determined by kymographic tracings of the blood pressure, the respiration and in some instances of the brain pressure. Examination of the eyegrounds were made by Dr. de Schweinitz or by Dr. Holloway, before the experiment was begun and afterward at intervals of every few minutes. The degree of intracranial tension was recognized by the increase in blood pressure and by the partial or complete arrest of the respiratory function. In every experiment, tension was increased up to a point where the respiratory function was arrested and it became necessary to resort to artificial respiration to resuscitate the animal.

The following is the summary of the observations:

Case 1.—Summary: Dry method. Extreme degree intracranial tension; no evidence of choked disc; slight dilation and pulsation of nasal branch of retinal veins. The changes in the vessels were quite as marked on the opposite side as on that on which pressure was inserted.

Case 2.—Summary: Dry method. Under a degree of intracranial tension, sufficient to cause arrest of respiratory function and elevation of the blood pressure, signs of intracranial tension continued from one to two hours. There were no changes in the eyeground other than filling and subsequently pulsation of the retinal veins.

Case 3.—Summary: Dry method. Increase of intracranial pressure attended with most profound disturbance of the respiratory and circulatory centers caused practically no changes whatsoever in the eyeground, not even the filling and pulsating of veins as observed in previous experiments.

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CASE 4.—Summary: Wet method. Intracranial pressure increased by introduction of 185 c.c. of normal saline solution in subtentorial region. Much smaller quantity required to cause changes in retinal vessels and the death of the animal than in pretentorial region. No signs of papilledema.

CASE 5.—Summary: Wet method. The enormous amount of saline solution (2,520 c.c.) which was absorbed in so short a time (two hours) in itself was remarkable. The eye symptoms, except exophthalmus, were not particularly marked; no edema or pulsation having occurred. At the autopsy all the organs, with the exception of the lungs, were filled with fluid.

CASE 6.—Summary: Dry method. Increase of intracranial pressure (by distention of a bag inserted within the cranium) up to and beyond the physiologic limit, as indicated by the arrest of the respiratory and circulatory function, failed to provoke papilledema. At times the discs were bleached; at times the veins were distended, and at times there was pulsation of the vessels, but nothing more.

CASE 7.—Summary: Wet and dry method combined. The intracranial pressure was increased with the distended bag until there were signs of intracranial tension; the latter was increased up to and beyond the maximum degree of toleration by the introduction of 100 c.c. of normal saline salt solution. No changes in the eyegrounds were observed.

From the experiments these conclusions are drawn:

1. Increase of intracranial tension by artificial means up to a point attended with profound disturbance of the circulatory and respiratory functions was in no instance attended with development of a papilledema, except in two instances not here recorded, and in these there was no marked swelling of the disc, but only a slight edema and filling in of the center of the discs.
2. The duration of the observation varied from two to ten hours; in one instance increased intracranial tension was maintained and observations made from six o'clock in the evening to four o'clock the next morning. So that the element of time did not affect the results.
3. In some instances the eyegrounds were bleached (the stage of anemia) and in many there was more or less fulness and occasionally pulsation of the retinal veins, but nothing else.
4. The degree of intracranial tension artificially produced in these experiments exceeded by far that which obtains in the vast majority of these lesions of which papilledema is a clinical manifestation.
5. Therefore, in the etiology of papilledema some factor or factors other than increased intracranial tension play an important part.
6. What these may be is still a matter of conjecture.

Papilledema and its relation to intracranial trauma is a subject which has commanded our attention for a number of years. The statement has been made that papilledema is a more or less constant accompaniment of those cases of intracranial trauma in which there is obstruction to the venous circulation, the stage of *Stauungs hyperemie* which, according to Kocher's scheme, is the first stage of cerebral compression. These include cases of cerebral contusion, in which edema is a conspicuous feature, although it might include also cases of large intracranial hemorrhages. For the past two years Dr. de Schweinitz has examined almost all the cases of this description in my service at the University Hospital, and in all he has discovered but two cases of papilledema. This is an insignificant number on which to base any conclusion, but a small number of carefully studied and observed cases is often of greater value than a mass of imperfectly digested material.

Because of their direct bearing not only on the etiology of papilledema but on the question of operative interference for relief, I refer to the cases in some detail.

CASE 1.—A young man, aged 25, sustained an injury to his head in falling from a trolley car.[1] There was no positive evidence of fracture of the skull and the case was regarded as one of cerebral contusion. The principal symptoms were vomiting, delirium and frontal headache. The latter was intense and persisted in this intense form for at least ten days after the accident. The pupils were equally dilated and there were no focal symptoms. The superficial veins of the scalp were conspicuously dilated.

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The patient was discharged from the hospital but returned to the out-patient clinic for further observation. Within a few weeks the vision was entirely normal and the papilledema had entirely disappeared.

In this case we see a type of intracranial trauma which would be regarded as a concussion or, more properly, a contusion without evidence of fracture but with symptoms persisting for almost two weeks, at no time attended with unconsciousness, stupor or convulsions, but with a moderately high grade papilledema which subsided spontaneously, that is, without operative intervention. The question of a decompressive operation was considered, but because of the absence of conditions that could be said to be alarming, was not resorted to.

CASE 2.—A woman, aged 35 years[2] fell from a trolley car and sustained a serious injury to her head. On admission she was completely unconscious and did not respond to any external stimuli. There was a large hematoma on the left occipitotemporal region, but no fracture could be felt. There was no bleeding from the nose, mouth or ears; the pulse was slow and intermittent and the blood pressure 128 millimeters of mercury. Examination of the urine discovered 3.5 per cent. of sugar. There were no sensory and no motor phenomena except in the muscles supplied by some of the cranial nerves. There was some weakness of the muscles supplied by the left facial nerve. In examining the eye, Dr. de Schweinitz reported as follows: R. O. oculomotor palsy; superior, inferior and internal rectus involved; ptosis not quite complete; pupils dilated about five millimeters; no reaction to light; well marked edema of the disc + 3 D.; enormous dilation of the retinal veins and moderate tortuosity; arteries unchanged; L. O. no involvement of the external ocular muscles; condition of the disc and retinal veins same as on the other side. The symptoms were attributed to a serious cerebral contusion and the involvement of the cranial nerves to small nasal hemorrhages, possibly to a fracture of the petrous bone.

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Whatever other indications there may be for decompression in cases of intracranial trauma, it would appear from these at least that papilledema alone can not be regarded as one. In both instances the papilledema measuring + 7 and + 3.5 diopters respectively sub-

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and they are quite obvious if one is on the lookout for them, and I think the only chance of missing them is by not thinking of this condition.

Dr. Robert L. Pitfield, Germantown, Philadelphia: I recall two cases of sacroiliac disease following labor, one of which yielded to strapping of the back, but I was compelled in another case to apply a belt and bind the woman, and she suffers even now from pain, particularly on rising from bed in the morning.

Dr. William A. Jones, Minneapolis: In many of these cases that Dr. Goldthwait has described, in which there is actual nerve irritation, is it due to changes in position of the vertebra, and is it probable or likely that aside from the sacroiliac joint that the position of the other vertebræ can be changed at all? This, I think, is a difficult question for neurologists to appreciate fully.

Dr. J. E. Goldthwait, Boston: I do not believe that the vertebræ change their position very much. The cervical vertebræ, I am sure, can be slipped a little bit out of place, and I am inclined to think that is more common than we generally suppose. I do not believe that the dorsal and lumbar vertebræ change their places much unless there is severe trauma. I think that the last lumbar vertebra can be slipped forward on the sacrum much more commonly than is generally supposed. Pregnancy is the most common source of the relaxation of the joint, but that is rarely productive of pain such as a neurologist would note, because the relaxation is so soft and the tissues are all so much relaxed that the nerves and all the tissues are stretched, and there is comparatively little pressure. If the pain continues and the stability does not return with the use of a belt or proper support, I should suspect that the bones were not in quite the original position, because usually when they are in the normal position Nature is ready with the muscles and ligaments to hold them in that position.

In so-called cases of railroad spine, examine the sacroiliac joint. I never saw a railroad spine which was not really a sacroiliac joint sprain. If you will read the books on this condition you will find that the profession is not in accord as to what it is, and if you will study the mechanics of the spine and the nature of the accidents commonly productive of railroad spine, the wonder is not that people have the sacroiliac joint strains which lead to the weak backs and nervous backs, etc., but that they all do not get it. It is the sudden stopping and the jerking of the body forward or backward, with the muscles off their guard, that causes the trouble.

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Papilledema and its relation to intracranial trauma is a subject which has commanded our attention for a number of years. The statement has been made that papilledema is a more or less constant accompaniment of those cases of intracranial trauma in which there is obstruction to the venous circulation, the stage of *Stauungs hyperemie* which, according to Kocher's scheme, is the first stage of cerebral compression. These include cases of cerebral contusion, in which edema is a conspicuous feature, although it might include also cases of large intracranial hemorrhages. For the past two years Dr. de Schweinitz has examined almost all the cases of this description in my service at the University Hospital, and in all he has discovered but two cases of papilledema. This is an insignificant number on which to base any conclusion, but a small number of carefully studied and observed cases is often of greater value than a mass of imperfectly digested material.

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Whatever other indications there may be for decompression in cases of intracranial trauma, it would appear from these at least that papilledema alone can not be regarded as one. In both instances the papilledema measuring + 7 and + 3.5 diopters respectively subsided spontaneously within a comparatively short time after the accident, *i. e.*, between two or three weeks.

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Furthermore, I wish to call attention to the relative infrequency of papilledema as a manifestation of serious types of intracranial trauma. That it may exist in certain instances there is no doubt, but its comparative infrequency, minimizes its significance as a diagnostic sign and as a means of determining the degree of intracranial tension and the necessity of relieving it by surgical measures.

The question of the relation of the papilledema to the size, situation, duration and nature of the tumor is not a new one. That the size of the tumor has little to do with the degree of elevation of the disc is the consensus of opinion; that a cortical or a basal tumor is more apt to cause papilledema than a subcortical, in the white substance of the brain, is also well known, and finally that tumors in the subtentorial region lead to papilledema earlier in the course of the case than pretentorial cases, will not be questioned. In tabulating a series of 19 cases, selected only from patients examined by de Schweinitz and subsequently operated on by myself, I found that with two exceptions (in which the discs measured + 7 and + 9 diopters respectively) whenever a papilledema was present the measurements were rather uniform; that is to say, the majority measured from + 3.5 to + 4 or + 4.5 D. Irrespective of duration, of the nature of the tumor, whether infiltrating or more or less encapsulated, with the size varying from that of a chestnut to a hen's egg, there was a comparatively uniform elevation of + 3 to + 4 diopters. In other words, a trivial and insignificant variation.

TABLE 1

No.	Name.	File No.	Diagnosis.	Operation.	Eye Examination Before Operation.	Eye Examination After Operation.	Result.
1	L. E. P.	560	Sarcoma cerebellum.	12, 17, '03. Craniectomy; removal of small tumor.	12, 8, '03. O. D. + 7 D. O. S. + 7 D.	1, 25, '04 O. D. + 4 D. O. S. + 3 D.	Died 10, 27, '04.
2	M. G. J.	1782	Tumor cerebello pontile angle.	10, 15, '06. Unilateral decompression; suboccipital craniectomy.	10, 10, '06. O. D. + 4 D. O. S. + 3 D.	12, 9, '06. O. D. + 3 D. O. S. + 1 5 D.	Still living.
3	F. M...	578	Sarcoma of cerebellum.	3, 13, '04. Suboccipital craniectomy and removal of portion of cerebellum.	3, 7, '04 O. D. + 4 D. O. S. + 3 D.	3, 26, '04. No change.	Recovered; died subsequently.
4	G. E...	697	Tumor of cerebellum.	12, 14, '03. Unilateral suboccipital craniectomy; portion of cerebellar (⅓) hemisphere removed.	12, 12, '03. O. D. + 4 D. O. S. less.	11, 6, '07. Entirely subsided.	Recovered; still living.
5	P. K...	1054	Cerebellar tumor.	5, 17, '05. Unilateral suboccipital craniectomy; portion of hemisphere removed.	5, 12, '05. O. D. + 6 D. O. S. + 4 D.	7, 21, '05. Discs show practically no swelling.	Recovered; died 12, 24, '05.
6	S. L...	1157	Cerebellar tumor.	10, 26, '05. Unilateral suboccipital craniectomy; dura not opened.	10, 23, '05. O. D. + 5 D. O. S. optic atrophy.	2, 1, '06. O. D. + 1 D. O. S. + 1 D.	Recovered; still living.
7	S. L...	1157	Cerebellar tumor.	Second operation 6, 14, '06. Dura split......	6, 11, '06. O. D. + 1 D. O. S. + 1 D.	6, 21, '06. O. D. + 1 D. O. S. + 1 D. Practically flat.	Recovered; still living.
8	T. H. A.	3107	Sarcoma cerebello pontile angle.	12, 8, '07. Unilateral suboccipital craniectomy.	12, 6, '07. O. D. + ⅔ D. O. S. + 1.5 D.	1, 8, '08. O. D. + 2 D. O. S. Swelling subsided.	Died subsequently, after radical operation.
9	E. F...	1267	Tumor of cerebellum.	3, 10, '06. Unilateral suboccipital craniectomy.	Well-marked atrophy.	Well-marked atrophy.	Recovered; still living.
10	H. M..	3686	Tumor of cerebellum.	6, 29, '08. Bilateral suboccipital craniectomy; dura split.	6, 26, '08. O. D. + 5 D. O. S. + 5 D.	7, 30, '08. O. D. + 1 D. O. S. Atrophy; practically no swelling.	Recovered; still living.
11	M. S...	3697	Tumor of cerebellum.	6, 30, '08. Unilateral (left) craniectomy.....	6, 28, '08. O. D. + 8 D. O. S. + 8 D.	7, 31, '08. O. D. + 1 D. O. S. No swelling.	Recovered; still living.
12	E. D...	1231	Tumor of cerebellum.	2, 26, '06. Unilateral suboccipital craniectomy; dura not split.	2, 15, '06. O. D. + 6 D. O. S. + 7 D.	3, 25, '06. O. D. + 4 D. O. S. + 3 D.	Death.

If I may be permitted to refer to another threadworn subject, namely, the equality or inequality of the discs in the affected as compared with the unaffected side, I would like to place in evidence a series of cases in which the discs were examined by Dr. de Schweinitz before the operation and we were able at the operation to expose the tumor. In these there was not enough difference between the disc of the affected and that of the unaffected side to enable us to draw any conclusions as to the seat of the tumor. This testimony is in absolute disaccord with the very positive statements of Horsley, whose operative experience has been so exceptionally large, but it agrees with the more recent observations of Mr. Paton. I present this series, small as it is, for what it may be worth, and I may add, I think, without contradiction of Drs. de Schweinitz, Mills, or Spiller, who have examined practically every patient operated on in my clinic, that in cases in which there was any doubt as to whether the lesion was on one side or the other, it was the exception rather than the rule to be able by examining the swelling of the discs alone to draw any definite conclusions. Much help, however, can be obtained by studying the age of the nerve-head changes, that is, which disc has been longest affected, by finding the signs of beginning atrophy, etc., points which Horsley also considers most important.

In dwelling on these various aspects of papilledema I have wandered somewhat afield from the subject assigned me, namely, "The Surgical Aspects of Cerebral Decompression." Reference has already been made to the propriety of decompressing in cases of intracranial trauma with papilledema. Apart from trauma, decompression is practiced as a means of relief in certain cases of hydrocephalus, tumors and internal hydrocephalus, but as there are no ocular manifestations of importance in epilepsy I shall confine my remarks chiefly to tumors with or without hydrocephalus.

It is a well-known fact that the large majority of tumors, whether pretentorial or subtentorial, are inoperable. That is to say, the majority are either inaccessible or impossible of localization, or of such a nature as to make their removal inconsistent with the maintenance of life. To express the percentage of operable tumors in figures is not an easy matter; to estimate it from the results of postmortem observations is obviously misleading; to say that from 75 to 80 per cent. are inoperable is by no means a conservative estimate.

In the surgery of brain tumors there are but two propositions to consider: the radical operation, implying the removal of the tumor, and the palliative operation, cerebral decompression. From what has been said of the operability of brain tumors it will be seen at a glance that in the majority of instances the most we can offer is palliation. But in the case of brain tumor palliation implies much more than it does when applied to other incurable lesions. That is to say, given a patient with an inoperable brain tumor palliation means restoration or preservation of vision, relief from headache and from persistent vomiting, three symptoms which together combine to make the patient's life utterly wretched and unbearable. Without them she or he may continue to live for years in comparative comfort.

Decompression is a very much less formidable procedure , it can be performed in a much shorter time and with but trifling risk to life. It implies the removal of an area of bone with a diameter of from 3 to 5 cm. from the temporal region or occipital region on one or both sides and a free opening in the dura or the removal of a portion of it. Whether or not to decompress in the temporal region will depend to a great extent on the situation of the lesion. In all pretentorial tumors temporal decompression is the operation of choice and in all subtentorial lesions a suboccipital decompression is indicated. Usually, sufficient relief from intracranial tension will be afforded by a unilateral operation; should the tumor grow rapidly and the symptoms recur the operation may be repeated on the opposite side.

For the purpose of studying the effects of decompression on a papilledema when performed in the temporal and suboccipital regions I have tabulated two series of cases (See Tables 2 and 3) from Dr. de Schweinitz's records. Although the disc examination was not made at the same interval after operation in all cases, it would seem that the results of temporal decompression were about as good as these of suboccipital decompression or *vice versa*. While I have never decompressed in the temporal region for lesions of the cerebellum, it is reasonable to assume that by this method we might not obtain the necessary relief of tension for lesions beneath or behind the tentorium. In the case of tumors the cerebellar hemispheres are usually under much greater tension than the cerebral hemispheres, often so great that nothing but the removal of bone from directly over the seat of the hemisphere would afford adequate relief.

Cerebral decompression is called for, as a rule, in inoperable tumors; it may be resorted to, however, as a matter of temporary expediency, when the conditions do not admit of delay and the tumor can not be localized. Delay is inadmissible when the papilledema has persisted from six weeks to two months, whether or not there has been temporary improvement under the influence of mercury or the iodides, when procrastination will lead inevitably to optic atrophy and to blindness.

There should be no question about the advisability of operating in these comparatively early cases if only to save vision. The propriety of operating in the advanced cases, when the patient is already in deep stupor, may be questioned. Bruns, for example, opposes such a course. It should be borne in mind that with the patient unconscious the operation can be performed, as I have had occasion to do, without an anesthetic. The operation can be completed in twenty minutes and, while adding but little to the gravity of the situation, may save the patient's life. A striking example of this was brought to my attention in a patient referred to me by

TABLE 2

No.	Name.	File No.	Diagnosis.	Operation.	Eye Examination Before Operation.	Eye Examination After Operation.	Result.
1	W. D..	557	Tumor of brain.	11, 7, '03. Decompression.	11, 5, '03. O. D. nerve head swollen; O. S. nerve head swollen.	1, 2, '04. O. D. + 3 D. O. S. + 4 D.	Recovery; still living.
2	J. K...	3116	Tumor of brain.	1, 10, '08. Decompression.	Marked papilledema.......	Papilledema entirely disappeared.	Recovered; still living.
3	P. S...	1268	Tumor of brain.	3, 20, '06. Decompression.	1, 29, '06. O. D. + 5 D. O. S. + 4 D.	11, 6, '07. Papilledema practically disappeared; discs show beginning atrophy.	Recovered; still living.
4	M. B...	2084	Tumor of brain.	1, 13, '07. Decompression.	1, 5, '07. O. D. + 3-4 D. O. S. + 3-5 D.	11, 6, '07. Both eyes advanced optic atrophy; all swelling gone.	Recovered; living 11, 6, '07.
5	I. K...	1937	Tumor of brain.	11, 28, '06. Decompression.	11, 19, '06. O. D. + 5.5 D. O. S. + 5.5 D.	1, 5, '07. O. D. + 2 D. O. S. + 2 D.	Recovered.
6	E. U...	1862	Tumor of brain.	11, 1, '06. Decompression.	10, 26, '06. O. D. + 5 D. O. S. + 5-6 D.	12, 9, '06. O. D. + 4 D. O. S + 4 D.	Recovered; died subsequently.
7	M. B...	802	Hydrocephalus unilateral of brain.	10, 10, '04. Occipital decompression.	10, 3, '04. O. D. + 4 D. O. S. + 4 D.	10, 24, '04. O. D. + 2 D. O. S. + 2 D. 10 weeks after operation choked disc entirely subsided.	Recovered; still living.
8	I. D....	978	Tumor of brain.	6, 12, '05. Suboccipital decompression.	6, 9, '05. O. D. + 8 D. O. S. atrophy.	6, 16, '05. O. D. + 6 D. O. S. atrophy.	Death 2 weeks after operation.

TABLE 3

No.	Name.	File No.	Papilledema.	Duration.	Situation.	Nature.	Approximate Size.
1	L. E. P..	560	O. D. + 7 D. O. S. + 7 D...	10 months...	Left cerebellar hemisphere.............	Sarcoma, sharply defined.	Hazelnut.
2	M. G. J..	1782	O. D. + 4 D. O. S. + 3 D...	2 years......	[illegible]	Fibrosarcoma...	Horse chestnut.
3	T. H. A..	3107	O. D. + 2-. D. O. S. + 1.5 D.	7 years......		Sarcoma	Hickorynut.
4	M. S.....	3697	O. D. + 8 D. O. S. + 8 D...	6 months....		Unknown.	Hickorynut.
5	E. D.....	1231	O. D + 6 D. O. S. + 7 D...	2 years......		?	Hen's egg.
6	Mrs. S...	542	O. D. + 4 D. O. S. + 5-5.5 D.	1 year.......		Neurofibroma. .	Chestnut.
7	I. D.....	978	O. D. + 8 D. O. S. atrophy.	1½ years.....		Sarcoma	5×8 cm.
8	A. G.....	836	O. D. + 3 D. O. S. + 5 D..	2 years......	Left temporal lobe at base..............	Sarcoma	3.5×3 cm.
9	W. D....	3340	Subsiding neuritis; swelling greatest on left side.	18 months...	Right parietal region (cortical).........	? Glioma........	3.75×2 cm.
10	J. S......	624	O. D. + 5 D. O. S. + 4 D..	4 years......	Left parietal region (cortical)...........	Sarcoma	6.25×6.25 cm.
11	G. A. H..	2146	No [illegible]	6 months . .	Right frontal [illegible]	Sarcoma	Hen's egg.
12	A. C. E..	3690	No	....	Left parietal	Glioma..........	7×6×3.5 cm.
13	G. K.....	464	O. 1 [illegible] beginning neuritis.	Several years.	Left parietal	Sarcoma	Small.
14	H. S. G..	1214	No examination............	5 months....	Right occipital and temporal at base...	Sarcoma	Child's fist.
15	A. K.....	2223	Extensive papilledema. O. D. + 7 D. O. S. + 7 D.	1 year.......	Left temporal lobe at base.........	?	Large size.
16	E. U.....	1862	O. D. + 5 D. O. S. + 5-6 D.	6 months....	Right parietal [illegible]	Sarcoma	Large.
17	M. B.....	802	O. D. + 4 D. O. S. + 4 D...	10 months...	Right occipital	Cyst.	Capacity 1½ oz.
18	Mrs. J. L.	3205	O. D. + 5 D. O. S. + 3.5 D.	4 months....	Right occipital	Cyst.	

Dr. Mills. The case seemed hopeless—the patient was unconscious when brought to the hospital and her life was despaired of. A rapidly executed decompression was followed by subsidence of some of the symptoms with recovery of consciousness. On the other hand, in a similar patient recently operated on for Dr. William G. Spiller, the operation seemed to have no effect on the fatal tendencies.

Finally, a few words as to the immediate and ultimate effects of decompression. At the site of the operation there developes a hernia protruding more or less according to the degree of intracranial tension. This is usually well covered with hair and therefore particularly in women, is not very conspicuous.

The mortality following operations on patients with cerebral or cerebellar tumors will depend on the condition of the patient and the seat of the lesions. The longer the duration of the lesion and the nearer the growth to the pons and medulla the greater the danger. All told, in the past seven years I have had only two fatalities following temporal decompression for cerebral tumors. In one of these the patient was stuperous when operated on, and at the autopsy a large tumor was found extending from the temporal lobe back to and including the pons. In the other the tumor also involved the pons. Of the suboccipital decompressions for tumors or suspected tumors of the posterior fossa in the same period there have been five fatalities, one in each of the years from 1904 to 1908. But three of these cases were operative deaths in the strict sense; that is, the patient never fully recovered from the shock of the operation. The two remaining lingered several weeks.

Vomiting and headache, one or the other or both, are relieved in about two out of every three cases by decompression.

In a word, the effects of decompression are in the main beneficial; in fact, so beneficial that we should not question the propriety of operating even though the case may at first seem hopeless. The only grave and fortunately a very rare consequence is sudden blindness. This has never occurred in our service, and apart from this I have never seen any aggravation of the condition of more than a transitory character.

The expectancy of life is a matter of no little interest; even though the patient survives the ordeal but a year, it is not a little in this period to have saved sight, allayed vomiting and relieved headache. In exceptional instances a longer lease on life may be anticipated. Among my patients is one operated on in 1902, one in 1903 and two in 1904. The larger the tumor and the nearer its approach to the vital centers the shorter will be the period of survival.

ABSTRACT OF DISCUSSION *

DR. JAMES BORDLEY, JR., Baltimore: I believe that I can best emphasize the importance of this subject by relating some statistics gathered from the records of 91 out of nearly 300 of the patients operated on by Dr. Cushing at the Johns Hopkins Hospital.

In determining which eye was the more affected—the one contralateral or homolateral to the tumor—we considered not only the swelling but the actual condition of the nerve head, outside of the swelling, the visual fields and the acuity of vision. This was necessary because while the swelling of one disc is increasing the other may have undergone atrophy and the swelling have entirely disappeared. The eye homolateral to the tumor exhibited the greatest change in 68 per cent. of the patients in whom the location of the tumor was a matter of certainty; the eye contralateral to the tumor in 26 per cent.; and in 6 per cent. swelling was equal on two sides.

There was no relationship between the histology of the tumor and the height of the choked discs, that is, none that could be of assistance in determining from the disc whether we were dealing with a malignant or benign growth. Patients with benign tumors and choked discs or from 1 to 7 D.; those with malignant tumors from 1 to 9 D. The disc in cerebellar cases had an average height of 5½ D.; with tumors situated further forward, 3½ D. There was, however, such a radical difference in the height of swelling of the discs in patients with tumors in identically the same situation that we look upon the degree of swelling as only suggestive but not conclusive as a localizing sign. The height of the swelling in the 182 discs of these 91 patients, before operation, was from 1 to 2 D. in 28; from 2 to 4 in 68; from 4 to 6 D. in 51; from 6 to 9 D. in 25, and in 18 there was complete secondary atrophy; 7 had normal discs.

The average length of time for an appreciable change in the swelling to make its appearance after the operation was two days. The average length of time for the swelling to disappear entirely was six weeks. These periods bore no fixed relation to the height of the swelling, but as a rule, the higher the swelling the slower its recession. In one case with the swelling 6 D. a slight edema was to be found eight months after operation. In two cases with swelling of less than 2 D. there was not a trace to be found forty-eight hours after operation. As a rule the edema of nerves in which atrophy was marked disappeared more rapidly than in those without. The swelling in four eyes of two patients was only lessened but not cleared up by operation. These two patients had large malignant growths and high tension was soon re-established.

The ultimate damage to vision was much greater in those cases in which large exudative masses and definite proliferative changes in the cup, on the surface of the disc and in perivascular lymph spaces, could be detected before operation.

Fifty-nine eyes showed increased vision subsequent to operation; in 65 the vision remained the same and in 16 vision continued to fail. Of the 65 in whom the vision remained the same, 29 had normal vision, 24 were blind, and 12 had vision varying from 20/30 to light perception. Fourteen eyes with normal vision subsequent to operation were not tested before; 2 eyes blind subsequent to were not tested before; 18 eyes tested before but not after operation.

Of those operated on and benefited, 2 without light perception regained it; 2 able to count fingers at six inches recovered vision of 20/40 and 20/20, respectively; 14 with vision of 20/200 or slightly less, the improvement varied from only a nominal gain to perfect sight. Of those showing a loss in vision subsequent to operation, 6 became blind; of this number only 2 had useful vision prior to operation. The cause of the change in these cases was, we think, quite clear, pressure on the tracts and shrinkage of the new connective tissue formation of the disc. In these cases, we feel confident, the ultimate result would have been the same whether they were operated on or not. Eight eyes in patients refusing operation subsequently became blind. Partial or total atrophy of the optic nerve was noted on admission in 52 out of the total of 182 eyes. To review briefly: Of 130 eyes in which the record before and after operation could be compared, 59 had increased vision, 16 decreased and 65 remained the same.

DR. T. B. HOLLOWAY, Philadelphia: Unfortunately in many cases of papilledema resulting from brain tumor, the intraocular examination has been summed up in a statement that there existed papilledema without any reference to its characteristics. If the question of the greater amount of swelling of the disc being homolateral or contralateral to the lesion is ever to be accurately determined, it seems to me that we must make and record certain definite ophthalmoscopic measurements, that have been elsewhere referred to.

As is well known, most statistics in the past have shown that the disc showing the greatest swelling is homolateral to

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* A long article on this subject by Drs. G. E. De Schweinitz and T. B. Holloway, Philadelphia, appears in the Transactions of the Section on Ophthalmology, 1909, but will not appear in THE JOURNAL.

the lesion. A rather hurried search of the available cases recorded by Dr. De Schweinitz and myself, excluding those observed in the university and orthopedic hospitals, shows that the greatest swelling was homolateral in 50 per cent., contralateral in 20 per cent., and of equal extent in 30 per cent. of the cases.

In the few cases in which it was definitely stated which eye was first affected, it was found that the homolateral eye was, in the majority of cases, the first to show evidence of a papilledema. Likewise, in the majority of the cases, when the case histories revealed a record of the vision, it was found that the eye having the greatest impairment of vision was homolateral to the growth.

In reference to the rarity of papilledema in myopic eyes, I can recall but two cases that I have seen, and both of these were under observation at the Orthopedic Hospital in the service of Dr. Wharton Sinkler. In neither case was the myopia over 5 D. Paton refers to the macular fan which is seen in many cases of brain tumor as being due to a passive edema, in contradistinction to the macular fan seen in cases of nephritis which he refers to as being due to what he terms an active edema.

Recently I have had under observation a case associated with marked macular edema in which a typical macular fan developed, which was indistinguishable from that seen in the two conditions above referred to. Three weeks after the receipt of the injury, the first spots appeared in the temporal side of the fovea, in the direction of the greatest edema, and from three to four weeks later the figure was complete. The lesion responsible for its development was a penetrating wound of the eye from a piece of steel, the wound of exit being at the outer edge of the macular region. In reference to the subsidence of papilledema after the relief of intracranial tension in cases of brain tumor, but very few of the cases observed at the university and orthopedic hospitals have shown any distinct reduction in swelling prior to the third day. In this connection, it is interesting to refer to the unusual case observed by Thomas and Cushing. Prior to the operation the discs were reported as atrophic. The morning following the operation the patient developed symptoms of compression and an ocular examination revealed a papilledema of 4 D. A large clot was removed from the site of operation, after which the retinal edema began to subside in a few hours and by the second day the atrophic discs were as clear as before.

This case is analogous to the cases reported by Harlings Jackson, de Schweinitz and A. G. Thompson and E. R. Williams, although in these last named cases, the papilledema affected nerves that were completely atrophic.

Dr. Edward Stieren, Pittsburg: Since my report last year (*Ophthalmic Record*, March, 1908) of three cases of choked disc relieved by exploratory operation I have observed one case, in a woman, in which the general symptoms—headache, vomiting and staggering gait—were relieved by a decompressive operation but in which the vision is progressively becoming worse. The case is one of undoubted cerebellar tumor, under observation for about a month before a right temporal decompressive operation was performed by Dr. J. J Buchanan. Before operation R. V. = 6/80, L. V. = 6/16—with 8 and 7 D. elevation of the discs, respectively. No perceptible decrease in the papilledema could be observed for two weeks following the operation, when the discs gradually receded, although well-marked signs of optic neuritis persisted, optic atrophy intervening and steadily progressing. At present R. V. = 2/200, L. V. = 6/60 eccentrically. I am inclined to attribute the disappointing result in this case to either a cancer toxemia of the optic nerves, the patient's general appearance suggesting a cancerous cachexia, her damaged third nerves being unable to combat the onslaught of toxic irritants. Or, as Dr. Cushing suggests in this class of cases, it may be due to direct involvement of the optic tracts. In the case reported by me and quoted by the essayists as the patient having lived a little less than five months after operation, I desire to say that instead the man lived more than three years after operation, which, in view of the enormous size of the growth attained, as shown by the illustration, is remarkable.

Dr. R. L. Randolph, Baltimore: I was struck with the fact that the results of the experiments of Drs. Frazier and de Schweinitz were entirely at variance with those of Drs. Bordley and Cushing. I should like to ask Dr. Frazier what animals were employed, and whether these animals and the technic were similar to those used by Bordley and Cushing. Furthermore, I should like to know whether he has ever seen in animals anything approaching the picture which we see in human beings and which is called choked disc, and, if so, whether it resulted from high tension alone within the brain or whether it resulted from high tension plus something else. Personally, I have always held that high tension within the brain was a potent factor—probably the most potent factor—in the production of the so-called choked disc, but I believe that there are other essential factors, in the absence of which, no matter how high the tension, choked disc will not be seen.

Dr. William H. Wilder, Chicago: I should like to mention some points in a case I have under observation, which illustrated the correctness of the statements of Dr. Spiller relative to the effect of the hernia of the brain that occurs after decompression operations. The case is that of a young Scandinavian about 20 years of age who came into my service at the Illinois Eye and Ear Infirmary last winter. He gave a rather indefinite history of headaches, no vomiting, and no marked symptoms of brain tumor. There was an apparent mental dulness. There was a marked papillitis, about 7 D. of swelling, with edema and slight hemorrhages in the surrounding retina. Dr. Hugh T. Patrick, who examined him, agreed that there was probably an intracranial growth, but could discover no localizing signs, although he suspected that the tension was on the left side and advised a decompression operation.

Dr. A. E. Halstead operated, removing a large piece of bone from the parietal and temporal region. The bone was extremely thin from pressure, and after section of the dura the brain protruded to such an extent that the flap was replaced with difficulty. The shock of the operation was great. Soon after recovery, the patient began to show a weakness of the right hand, and then paresis, and finally paralysis of the right hand, arm and lower muscles of the face. There was also ataxic aphasia. This condition lasted fully three months and was probably caused by the pressure of the motor area of the brain against the margin of the opening in the skull. Gradually the man recovered in part his speech, and also the power of his right hand and arm. The swelling of the nerve head receded, reaching about 4 D., which it was when I saw him about five weeks ago, with the vision about 20/50, as good as when I first saw him.

It seems to me that there is something more than intracranial pressure in the etiology of these cases of papillitis or papilledema. The theory as stated by Leber that the products of metabolism in the tumor, circulating in the lymph channels, and so coming in contact with the nerve and exciting a true neuritis, associated, it is true, with edema, is a very plausible one. A patient presented at the Chicago session by Dr. Peter Bassoe on whom Dr. Bevan had operated was possibly one of this kind. The man had a pronounced papillitis with 7 D. of swelling, which was not reduced by the decompression operation. At a second operation the tumor was located and removed, with disappearance of the papillitis and restoration of vision.

Dr. William G. Spiller, Philadelphia: I fully believe that decompression is a very valuable means of saving sight and of affording relief from certain symptoms, but I think it an operation which should not be performed hastily, and without careful study of the patient. It seems so simple to bore a hole under the temporal muscle that we may be inclined to advise it without due consideration. I had a patient who had grave symptoms of brain tumor, and I advised decompression. The man sank into a marked stupor, and has remained in that state ever since. The effect of decompression in this case is uncertain. Following decompression we may have graver symptoms from hemorrhage from a bleeding vessel which has escaped the surgeon's attention, or which has occurred after the wound has been closed; and hemiplegia may develop.

The hemiplegia which occurs in these cases develops soon after the operation and should lead to an exposure of the wound and a search for the clot and attempt at its removal. But, aside from that, there is a hemiplegia that develops in certain cases later in the course of the disease, perhaps a week or two after the operation. That form of hemiplegia is not always caused by hemorrhage either on or in the brain. In the past few weeks I have had opportunity to examine a brain from such a case, and I found that the hemiplegia was caused by an occlusion of the blood vessels by a hernia that occurred; the brain protruding through the opening in the bone and causing pressure directly on the vessels. We are inclined to think that the hernia produced after decompression is indicative of the growth of the tumor, and to say that the hernia shows exactly how much we have benefited the patient by relief of pressure, as otherwise the tumor would have grown and possibly have caused death. This conclusion is not invariably correct, but is correct in certain cases. The hernia may occur from causes we do not understand. While, therefore, I believe fully in decompression in suitable cases, and feel that it may be of great use, I also feel that we must study every case carefully before advising it.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: During the last eighteen months I have had four patients on whom the decompression operation was done. In two of the cases I was much gratified with the results of the operation so far as its effect on the vision was concerned. In all the cases a competent neurologist was consulted with the idea of making a diagnosis of the probable location of the tumor, but in two of the cases it was impossible for him to arrive at any definite conclusions, though he agreed as to the necessity for a decompression operation to save the vision, which was very rapidly failing. In one of the cases there was, within a few days following the decompression operation, an increase in the vision which was retained for several months. In this case, as well as in one other case, it was found later on autopsy that the tumor would in all probability have been located during the patient's life had the development of localizing pressure symptoms caused by the growth of the tumor not been disturbed by the decompression operation. It is therefore presumed that a little delay in the performance of the decompression operation might have resulted in prolonging the life of the patient through the localization and removal of the tumor. The decompression operation should be performed with a view of removing the tumor if possible, though with rapidly failing vision due to intracranial pressure and no localizing symptoms, the decompression operation in the silent zone is indicated and should be performed with a view of saving vision. We should always take into consideration the fact that the patient's life is in danger and the saving of vision is not as important as the saving of life. Some tumors can be removed and the life, as well as the vision, saved for many years.

Dr. B. A. Randall, Philadelphia: Out of a limited experience in this matter I would cite a recent case referred by Dr. S. Z. Shope of Harrisburg, Pa., which is interesting because the edema was extreme—8 or 9 D. There had been the question, also, if the rapidly increasing swelling could be due to lesion of the nasal accessory cavities. The eyesight was rapidly declining and there was no marked involvement of the nasal cavities. The patient, a girl of 20, had a clear history of specific inheritance, but no stigmata; and there had been a bad fall with a possibility of cystic growth. The neurologist regarded it as a case of neoplasm of the right motor region and urged not only decompression but exploration as to the presence and operability of the growth. Making a good-sized osteoplastic flap, I found great tension of the dura and on incising it, there was marked protrusion of the brain substance. I relieved this greatly by lumbar puncture, having had much question whether lumbar puncture would not have been safe and adequate. I then exposed and examined the motor convolutions more freely, and seeing and feeling no growth, sutured the dura and replaced the flap. The case had been admirable in its outcome thus far, but done on April 29 it is too soon to know the issue. Vision is restored in the left eye, the edema is almost gone in both, but the field is somewhat narrowed on the right and the lesions near the macula, simulating those of albuminuric retinitis, interfere greatly with its recovery. Whereas she had seemed stuffed up by small doses of iodid, she is now taking 33 grains three times daily and all symptoms are ameliorating. This seems merely a case of relieving destructive pressure until we could get the influence of our medication, unless we are wholly in error as to the specific nature of the lesion.

Dr. Nelson M. Black, Milwaukee, Wis.: As to not finding choked disc following head injuries, I would like to state that through the kindness of Dr. Charles Lemon, surgeon of the Milwaukee Electric Street Railway, I have had the opportunity of making ophthalmoscopic examination of cases of head injuries following street-car accidents. In one case there was a distinct choked disc of about 1½ D on the side opposite to the injury and a complete blurring and loss of contour of the disc margin on the side of the injury. This entirely disappeared within four or five days after decompression. In a second case, there was decided blurring of the disc margins equal in both eyes, which gradually cleared up in about two weeks; the temporal side of the disc clearing first; no decompression was done. In a third case, a man fell from a scaffold about fifty feet, landing on his head and shoulders; he was brought into hospital unconscious and when placed on the operating table stopped breathing. Artificial respiration was instituted and a decompression operation immediately done. As soon as the dura was opened a considerable amount of pinkish cerebrospinal fluid gushed out and the patient began to breathe. The ophthalmoscope showed nothing abnormal beyond decidedly hyperemic discs; but the decompression was done within an hour following the injury, so there was hardly time for the discs to become choked.

Dr. G. E. de Schweinitz, Philadelphia: The existence of choked disc does not always indicate operative interference. Naturally, prolonged and careful study must always be given to each patient before he is submitted to operation, and all means at our disposal which will help to establish a diagnosis should be brought into requisition. This is particularly true in such cases as may be due to syphilis, and the serum reaction for the detection of this infection, not only that of Wassermann, but its substitutes, so well discussed in the Section on Nervous and Mental Diseases, will doubtless prove of great service under such conditions. Moreover, each one of us should study most carefully the visual field phenomena to which Bordley has made reference. You have heard from him the interesting observations which he and Dr. Cushing have made, now, to be sure, only in their earliest stages, and it behooves all of us, whenever opportunity presents, to undertake similar examinations.

It has been known for many years that such alterations of the visual field occur in cases of brain tumor, and other organic diseases, but so far as I am aware, no such study has been given the subject as that which has been accorded to it by Dr. Bordley and Dr. Cushing, nor have the results which they have reached ever before been published.

While I am satisfied that one of the factors in the production of papilledema is increased intracranial tension, and am inclined to believe that it is the most important factor, I feel sure that it can not be the only one. In our experiments to which Dr. Frazier has made reference we never succeeded in the living eye in producing anything like the ophthalmoscopic picture of papilledema when a pure physiologic salt solution was used in subdural injections. On the other hand, if we added irritating substances to the fluid, formaldehyd, iodin, etc., we did succeed in producing, not a very pronounced but none the less a definite swelling of the optic nerve. Different results have been reached in the Johns Hopkins Hospital by Drs. Cushing and Bordley. Sometime or other we propose to exchange laboratory visits in order to see wherein either our technic or our results have differed.

Dr. Charles H. Frazier, Philadelphia: I have been asked whether we followed in the experimental work in papilledema the technic used in the Cushing-Bordley experiments. I am not familiar with the technic referred to; we purposely did not follow the method of previous investigators because we wanted to conduct our experiments with an open mind and entirely uninfluenced by the results of previous observers. As Dr. de Schweinitz has said, intracranial tension must be an etiologic factor; while admitting this, we are sure that it is not the only nor even the essential factor. Since the report was published, we have added to the physiologic salt solution certain irritating substances such as iodin and formaldehyd, and we are led to believe that these substances have some effect on the etiology of papilledema independent of intracranial tension. We have never yet seen papilledema in the dog similar to that observed in the human subject under analogous conditions.

Dr. Spiller cautions us against too frequent and too hasty resort to decompression. On the other hand, the operation should not be put off too long. I feel I have altogether too many patients absolutely blind, whose vision might have been preserved. Selecting at random for student demonstration five patients already operated on, I found in three out of the five that vision had been practically lost. From six weeks to two months is long enough to wait for improvement under the iodids and mercury, for the localization of the tumor, or for the confirmation of the diagnosis. If at the expiration of this time the papilledema is stationary, or increasing, side decompression should be practiced without further delay.

I have been asked whether, rather than resort too soon to decompression, we should not wait for the development of such symptoms as would suggest the situation of the tumor. I should say emphatically no. At any time after the decompression the radical operation may be performed and just as soon as focal symptoms make their appearance. The preliminary palliative procedure which relieves headache and vomiting and preserves vision, does not preclude the possibility of subsequently operating for the removal of the tumor. In some cases it delays development of the symptoms, but we are justified in operating early to relieve the subjective symptoms, especially when we know that in not more than one case in ten will the tumor prove to be operable.

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Pasteurization.—This does not mean simply the heating of milk; the subsequent rapid cooling is a very important part of the process.—M. J. Rosenau, in *Annals of Medical Practice.*

Clinical Notes

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WITHOUT SEVERING THE TENDON AND WITHOUT THE USE OF NEEDLE AND SUTURE *

H. H. BRIGGS, M.A., M.D.
ASHEVILLE, N. C.

The method is applicable to any case in which shortening of an ocular muscle is indicated. The principle involved is the looping of the tendon and maintaining the shortening thus attained by means of a silver link (Fig. 1) clamped over the loop and retained there until inflammatory adhesion takes place between the advanced portion of tendon and the sclera. The link, elliptical in shape, is made of silver wire (No. 20, Brown and Sharpe Standard). It is long enough to extend across the tendon, and wide enough to allow a small tendon hook with the looped tendon and overlying conjunctiva to pass through its lumen. The major axis of the link should be about 5 mm., the minor about 2 mm. Pure silver wire gives the proper amount of resiliency, retains its compressed shape, is easily removed and seems to serve better than an alloy. To insure against the tendon retracting through the link, burrs may be punched on the inner surface of the link to act as barbs against the pulling action of the tendon.

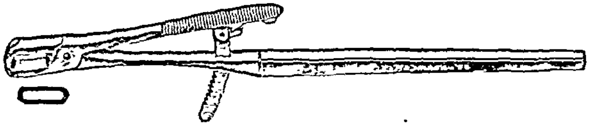

Fig. 1. Silver link and clamp forceps for use in tendon-shortening operation (forceps three-fifths size; link full size).

A clamp forceps (Fig. 1) is used to grasp the silver link in its jaws and hold it in position over the tendon until the loop of tendon and conjunctiva is drawn up through the link, when by compressing the forceps the link is compressed sufficiently firm over the loop to maintain the loop the required time after the forceps has released the link and left it *in situ.* Passing entirely across the approximating surface of the jaws near the tips are transverse grooves deep enough to hold the long parallel sides of the silver link. The length of jaw to the angle is sufficient to accommodate the longest loop of tendon that may be desired. A ratchet maintains the jaws in any compressed position over the link.

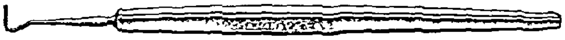

Fig. 2. Special tendon hook (three-fifths size).

A special tendon hook (Fig. 2) is used, differing from the ordinary small tenotomy hook in that its shank, 6 mm. above its angle, is bent backward in the plane of the hook at an angle of about 15 degrees. This bend allows the handle of the tendon hook to be held out of the operator's line of vision, and at the same time the hook may remain parallel to the tangent plane of the eye at the site of operation. The hook should be short enough to pass through the major axis of the link, and yet sufficiently long and strong to pull the tendon through the link, overcoming the pull of the opponent muscle, which may or may not have been previously tenotomized.

For removal of the link a scissors forceps with wedge-shaped blade above and flat blade below (Fig. 3) is

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The hemiplegia which occurs in these cases develops soon after the operation and should lead to an exposure of the wound and a search for the clot and attempt at its removal. But, aside from that, there is a hemiplegia that develops in certain cases later in the course of the disease, perhaps a week or two after the operation. That form of hemiplegia is not always caused by hemorrhage either on or in the brain. In the past few weeks I have had opportunity to examine a brain from such a case, and I found that the hemiplegia was caused by an occlusion of the blood vessels by a hernia that occurred: the brain protruding through the opening in the bone and causing pressure directly on the vessels. We are inclined to think that the hernia produced after decompression is indicative of the growth of the tumor, and to say that the hernia shows exactly how much we have benefited the patient by relief of pressure, as otherwise the tumor would have grown and possibly have caused death. This conclusion is not invariably correct, but is correct in certain cases. The hernia may occur from causes we do not understand. While, therefore, I believe fully in decompression in suitable cases, and feel that it may be of great use, I also feel that we must study every case carefully before advising it.

Dr. Albert E. Bulson, Jr., Fort Wayne, Ind.: During the last eighteen months I have had four patients on whom the decompression operation was done. In two of the cases I was much gratified with the results of the operation so far as its effect on the vision was concerned. In all the cases a competent neurologist was consulted with the idea of making a diagnosis of the probable location of the tumor, but in two of the cases it was impossible for him to arrive at any definite conclusions, though he agreed as to the necessity for a decompression operation to save the vision, which was very rapidly failing. In one of the cases there was, within a few days following the decompression operation, an increase in the vision which was retained for several months. In this case, as well as in one other case, it was found later on autopsy that the tumor would in all probability have been located during the patient's life had the development of localizing pressure symptoms caused by the growth of the tumor not been disturbed by the decompression operation. It is therefore presumed that a little delay in the performance of the decompression operation might have resulted in prolonging the life of the patient through the localization and removal of the tumor. The decompression operation should be performed with a view of removing the tumor if possible, though with rapidly failing vision due to intracranial pressure and no localizing symptoms, the decompression operation in the silent zone is indicated and should be performed with a view of saving vision. We should always take into consideration the fact that the patient's life is in danger and the saving of vision is not as important as the saving of life. Some tumors can be removed and the life, as well as the vision, saved for many years.

Dr. B. A. Randall, Philadelphia: Out of a limited experience in this matter I would cite a recent case referred by Dr. S. Z. Shope of Harrisburg, Pa., which is interesting because the edema was extreme—8 or 9 D. There had been the question, also, if the rapidly increasing swelling could be due to lesion of the nasal accessory cavities. The eyesight was rapidly declining and there was no marked involvement of the nasal cavities. The patient, a girl of 20, had a clear history of specific inheritance, but no stigmata; and there had been a bad fall with a possibility of cystic growth. The neurologist regarded it as a case of neoplasm of the right motor region and urged not only decompression but exploration as to the presence and operability of the growth. Making a good-sized osteoplastic flap, I found great tension of the dura and on incising it, there was marked protrusion of the brain substance. I relieved this greatly by lumbar puncture, having had much question whether lumbar puncture would not have been safe and adequate. I then exposed and examined the motor convolutions more freely, and seeing and feeling no growth, sutured the dura and replaced the flap. The case had been admirable in its outcome thus far, but done on April 29 it is too soon to know the issue. Vision is restored in the left eye, the edema is almost gone in both, but the field is somewhat narrowed on the right and the lesions near the macula, simulating those of albuminuric retinitis, interfere greatly with its recovery. Whereas she had seemed stuffed up by small doses of iodid, she is now taking 33 grains three times daily and all symptoms are ameliorating. This seems merely a case of relieving destructive pressure until we could get the influence of our medication, unless we are wholly in error as to the specific nature of the lesion.

Dr. Nelson M. Black, Milwaukee, Wis.: As to not finding choked disc following head injuries, I would like to state that through the kindness of Dr. Charles Lemon, surgeon of the Milwaukee Electric Street Railway, I have had the opportunity of making ophthalmoscopic examination of cases of head injuries following street-car accidents. In one case there was a distinct choked disc of about 1½ D on the side opposite to the injury and a complete blurring and loss of contour of the disc margin on the side of the injury. This entirely disappeared within four or five days after decompression. In a second case, there was decided blurring of the disc margins equal in both eyes, which gradually cleared up in about two weeks; the temporal side of the disc clearing first; no decompression was done. In a third case, a man fell from a scaffold about fifty feet, landing on his head and shoulders; he was brought into hospital unconscious and when placed on the operating table stopped breathing. Artificial respiration was instituted and a decompression operation immediately done. As soon as the dura was opened a considerable amount of pinkish cerebrospinal fluid gushed out and the patient began to breathe. The ophthalmoscope showed nothing abnormal beyond decidedly hyperemic discs; but the decompression was done within an hour following the injury, so there was hardly time for the discs to become choked.

Dr. G. E. de Schweinitz, Philadelphia: The existence of choked disc does not always indicate operative interference. Naturally, prolonged and careful study must always be given to each patient before he is submitted to operation, and all means at our disposal which will help to establish a diagnosis should be brought into requisition. This is particularly true in such cases as may be due to syphilis, and the serum reaction for the detection of this infection, not only that of Wassermann, but its substitutes, so well discussed in the Section on Nervous and Mental Diseases, will doubtless prove of great service under such conditions. Moreover, each one of us should study most carefully the visual field phenomena to which Bordley has made reference. You have heard from him the interesting observations which he and Dr. Cushing have made, now, to be sure, only in their earliest stages, and it behooves all of us, whenever opportunity presents, to undertake similar examinations.

It has been known for many years that such alterations of the visual field occur in cases of brain tumor, and other organic diseases, but so far as I am aware, no such study has been given the subject as that which has been accorded to it by Dr. Bordley and Dr. Cushing, nor have the results which they have reached ever before been published.

While I am satisfied that one of the factors in the production of papilledema is increased intracranial tension, and am inclined to believe that it is the most important factor, I feel sure that it can not be the only one. In our experiments to which Dr. Frazier has made reference we never succeeded in the living eye in producing anything like the ophthalmoscopic picture of papilledema when a pure physiologic salt solution was used in subdural injections. On the other hand, if we added irritating substances to the fluid, formaldehyd, iodin, etc., we did succeed in producing, not a very pronounced but none the less a definite swelling of the optic nerve. Different results have been reached in the Johns Hopkins Hospital by Drs. Cushing and Bordley. Sometime or other we propose to exchange laboratory visits in order to see wherein either our technic or our results have differed.

Dr. Charles H. Frazier, Philadelphia: I have been asked whether we followed in the experimental work in papilledema the technic used in the Cushing-Bordley experiments. I am not familiar with the technic referred to; we purposely did not follow the method of previous investigators because we wanted to conduct our experiments with an open mind and entirely uninfluenced by the results of previous observers. As Dr. de Schweinitz has said, intracranial tension must be an etiologic factor; while admitting this, we are sure that it is not the only nor even the essential factor. Since the report was published, we have added to the physiologic salt solution certain irritating substances such as iodin and formaldehyd, and we are led to believe that these substances have some effect on the etiology of papilledema independent of intracranial tension. We have never yet seen papilledema in the dog similar to that observed in the human subject under analogous conditions.

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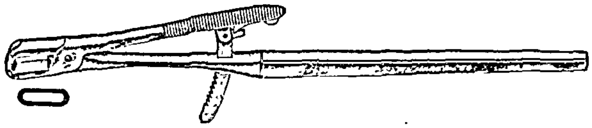

Fig. 1. Silver link and clamp forceps for use in tendon-shortening operation (forceps three-fifths size; link full size).

A clamp forceps (Fig. 1) is used to grasp the silver link in its jaws and hold it in position over the tendon until the loop of tendon and conjunctiva is drawn up through the link, when by compressing the forceps the link is compressed sufficiently firm over the loop to maintain the loop the required time after the forceps has released the link and left it *in situ*. Passing entirely across the approximating surface of the jaws near the tips are transverse grooves deep enough to hold the long parallel sides of the silver link. The length of jaw to the angle is sufficient to accommodate the longest loop of tendon that may be desired. A ratchet maintains the jaws in any compressed position over the link.

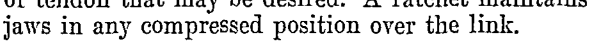

Fig. 2. Special tendon hook (three-fifths size).

A special tendon hook (Fig. 2) is used, differing from the ordinary small tenotomy hook in that its shank, 6 mm. above its angle, is bent backward in the plane of the hook at an angle of about 15 degrees. This bend allows the handle of the tendon hook to be held out of the operator's line of vision, and at the same time the hook may remain parallel to the tangent plane of the eye at the site of operation. The hook should be short enough to pass through the major axis of the link, and yet sufficiently long and strong to pull the tendon through the link, overcoming the pull of the opponent muscle, which may or may not have been previously tenotomized.

For removal of the link a scissors forceps with wedge-shaped blade above and flat blade below (Fig. 3) is used to divide each end, when the severed halves of the link may be removed with small tissue forceps.

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* Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

After the usual preparation of sterilization and anesthetization, the operator, standing on the side of the eye nearest the muscle to be shortened, makes a small opening in the conjunctiva on one side (the operator's right side) of the tendon near its insertion into the sclera, the distance from the insertion varying with the degree of advancement intended. An ordinary tenotomy hook passed beneath the tendon is held by an assistant, the clamp forceps holding the silver link is held over the tendon with one hand, and the special tendon hook passed down through the silver link is substituted for the hook held by the assistant. The tendon with its overlying conjunctiva is drawn up through the link to the desired degree, and the jaws of the clamp forceps forcibly approximated. If the degree of deviation is great, and the tendon loop to be made long, the conjunctiva, after being drawn up through the link a short distance, may be incised, allowing the tendon only to be advanced to any desired degree. It may be necessary in excessive advancements to excise the greater part of tendon and tissues protruding through the link, leaving only enough to insure non-retraction of the tendon ends through the link.

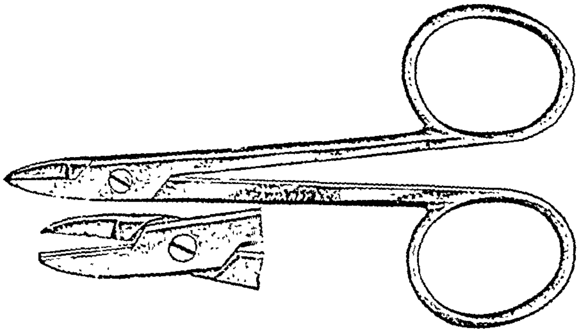

Fig. 3. Scissors forceps with wedge-shaped blade above and flat blade below, for severing link (full size).

The moderate edema of the tissues about the link immediately covers it so that no irritation is felt from the presence of the foreign body. Within twenty-four hours the strangulated tissues become white and begin to atrophy, and on removal of the loop in ten to fourteen days they should be excised.

The advantages of this operation over the usual methods of advancement are:

1. Simplicity.
2. Elimination of sutures.
3. Avoidance of tenotomy of the advanced muscle.
4. Absolute security from slipping or retraction of tendon.
5. Short duration of time of operation.
6. Less pain.
7. Less amount of plastic inflammation during convalescence.
8. Short period of convalescence.
9. Less scar and deformity.
10. Better results.

29 Haywood Street.

Eclampsia with Vesicular Mole.—E. Gross reports a case of eclampsia in a ii-para of 22 at the fifth month of pregnancy. The fetus and a large placenta partially transformed into a vesicular mole were expelled twelve hours after the first symptoms, and the patient died 31 hours later. He has found six cases on record of eclampsia with mole, and in the *Prager med. Wchnschr.*, July 1, discusses the frequency of moles and also of eclampsia at the fifth month of pregnancy.

EXCISION OF A TUBERCULOUS HIP-JOINT IN A WOMAN OF FIFTY

HARRY GREENBERG, M.D.
MILWAUKEE

In view of the prevailing opinion among surgeons, that radical excision of the hip-joint for tuberculosis should not be attempted after the fourteenth or fifteenth year, the following case will be of interest:

History.—Mrs. J. E. H., aged 50, had had tuberculosis of the right hip since she was 18 months old. In spite of the most diligent application of conservative treatment, she would continue to have relapses at intervals varying from five to ten years. At no time could a positive prognosis as to complete cure be assured. Abscesses were opened and drained at various intervals. For the past ten years she had been apparently well excepting for periodic attacks of pain in the affected hip. At no time was she able to walk without assistance of some kind. Twenty-six months ago a new abscess formed and pointed in the groin; it was opened by her family physician. Two weeks later she came under my observation.

Examination.—She was suffering from acute infection; temperature, 105.4 F.; pulse, 140; complained of severe pain in the right leg. Examination showed the right hip-joint completely ankylosed. The right leg was seven and one-half inches shorter than the left, and five inches less in circumference at its middle. It was markedly adducted, overlapping the left leg. Abscess and sinuses were discharging freely.

Treatment.—Local palliative measures were immediately instituted and continued for ten days. Her temperature varied from 104 to 106 F. Morphin was used continuously to relieve the pain. She was then removed to the hospital for more radical treatment.

Operation.—The joint was freely opened and the following conditions found: The head and neck of the femur and most of the acetabulum were completely destroyed by the tuberculous process. What remained of the upper end of the femoral shaft was a thin shell still retaining the shape of the bone. A ragged hole marked the place from which the base of the neck of the femur formerly sprung. Strong bands of fibrous adhesions bound this thin shell of bone on the ilium to a point about 3¼ inches above and behind the acetabulum. Free pus was present. The adhesions were severed and 3½ inches of the upper end of the femur removed. The sawed-off end of the femur was then placed in contact with the lower border of the actabulum and the wound sutured and drained. A sterile dressing was applied and the patient put to bed. No fixation of any kind was applied.

Subsequent History.—She began to improve immediately. Two months after the operation she walked about on crutches; twelve months later she was able to get about the house without the aid of crutches, and now, twenty-six months after the operation, she is able to walk long distances without any assistance whatever. She can flex, rotate, adduct and abduct the limb freely; in fact, she now has nearly 90 per cent. of motion, which before the operation was zero. The limb is 3½ inches longer than at the time of operation. Skiagrams taken twenty months after resection show a fairly well-formed new head and neck, growing in the direction of the original head and neck, and these lie in normal position with the acetabulum. Her general health is splendid and she has gained twenty-five pounds.

CONCLUSIONS

The good results obtained in this case as well as in twelve other cases[1] I attribute to the technic of the operation and of the after-treatment as I carry them out. This, in the main, consists in the complete removal of the diseased bone and the elimination of fixed dressings of any kind in the after-treatment. It is my opinion that plaster-of-Paris casts, splints and other fixation appliances commonly used in these cases after operation are responsible for the many bad results following this operation. Not only are they an unnecessary burden to the already overweakened and exhausted patient, but they are also a potent cause of deformity; insomuch that they prevent normal muscular action, thus giving the upper sawed end of the femur full scope to wander away from its moorings. Left to themselves, the various groups of muscles attached to the femur, by their opposing functions, tend to keep the bone in its normal plane. And as normal muscular action is essential in the production of a normal blood supply to the parts, healing is greatly facilitated.

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[1] In a paper read before the Wisconsin State Medical Society, July 2, 1909, to be published in the Wisconsin Medical Journal.

All this is exactly counteracted by the use of fixed dressings. In non-operative cases plaster-of-Paris casts applied prevent undue irritation by keeping the diseased bone at rest and apart. But since the diseased bone is removed in operative cases the application of a cast becomes superfluous. This case is of interest because:

1. Radical operation late in life seems feasible, or even practicable.
2. It proves how impossible it is for one to pronounce complete cure in cases treated conservatively.

Caswell Building.

OBSERVATIONS ON ALIMENTARY ALBUMINURIA BY MEANS OF THE ANAPHYLAXIS REACTION *

H. GIDEON WELLS, M.D.
CHICAGO

Alimentary albuminuria has commonly been assumed to be a simple filtration from the blood of a foreign protein, present in the blood only because it has been taken into the digestive tract in such large amounts that some of the protein has passed directly through the mucous membrane into the blood, without having been first decomposed into amino-acids and other cleavage products. The protein found in the urine was supposed to be the same as that which had been eaten in excess, both on theoretical grounds and because of the results of chemical investigations. The chemical methods available for the distinguishing of proteins so similar as serum albumin and egg albumin, however, are anything but satisfactory, and therefore the identity of the proteins found in the urine after eating large amounts of raw eggs was not positively established. With the discovery of the biologic test for proteins our resources were greatly increased, and we were for the first time provided with a delicate means of distinguishing between very similar proteins, provided they came from different species of animals. Naturally, it was not long before the biologic reaction was applied to the proteins of albuminous urine, the first question considered being whether the identity of the urinary proteins with the blood proteins could be established by this method. Leclainch and Vallee,[1] Mertens,[2] and Zuelzer[3] almost simultaneously experimented with the immunization of rabbits with the albuminous urine of nephritis. The French experimenters reported that the serum of such immunized rabbits reacted with albuminous urine and pleuritic exudates of man, but *not with human serum*, or with albuminous urine of cows or horses; therefore they concluded that the reaction was specific for the proteins of human exudates, but not of ordinary blood proteins. This rather remarkable result was not confirmed by either Mertens or Zuelzer, both of whom found that the serum of rabbits immunized with nephritic urine reacts with either nephritic urine or with human serum, and conversely, antihuman serum reacts with nephritic urine as well as with human serum. They therefore consider that at least one of the proteins of nephritic urine must be identical with a serum protein, thus proving the origin of urinary protein from the blood.

Ascoli[4] studied the occurrence of egg albumin in the urine after eating raw eggs, it having already been shown by Uhlenhuth[5] that by prolonged feeding of egg albumin to rabbits specific precipitins are developed in their blood, thus indicating the passage of egg albumin directly into the blood. As early as one to two hours after injection of egg albumin into rabbits, Ascoli found that the urine reacted with the appropriate antiserum for both egg albumin and rabbit serum albumin, the same result being obtained somewhat more slowly when the albumin was fed by mouth. In healthy men the presence of egg albumin in the blood could be demonstrated by the precipitin test as early as one and three-quarters hours after eating raw eggs, while in the urine both egg albumin and serum albumin can be demonstrated by the same method. Nephritics also excrete both egg albumin and serum albumin in the urine after eating raw eggs, according to the precipitin test. On account of the demonstration of the presence of both kinds of proteins in the urine, Ascoli concludes that the egg albumin when present in the blood so injures the renal cells that not only the foreign egg albumin, but also the normal serum proteins, escape into the urine. At times egg albumin may be demonstrable in the blood without the presence of any protein in the urine, a fact in harmony with the common observation that some healthy persons will show no albuminuria after eating even large quantities of raw eggs. In subsequent papers, Ascoli[6] reported observations to the effect that not only egg albumin, but also the proteins of beef and chicken, can be demonstrated in the blood and lymph shortly after these substances have been taken in the food; and when these proteins cause albuminuria the precipitin reaction will demonstrate in the urine not only the foreign protein but also the native serum proteins. Therefore, it would seem that foreign proteins are eliminated in the urine only through the injury which they produce in the kidney, and this injury makes it also temporarily permeable to the normal serum proteins. The finding of egg albumin by the precipitin test in human urine after eating raw eggs has been confirmed by others,[7] but so far as can be learned the presence of blood proteins in the urine in alimentary albuminuria has not been investigated except by Ascoli.

Cramer[8] states that the albuminous urine which is passed by rabbits after intraperitoneal injection of egg white does not give the precipitin reaction with antisera for either egg white or rabbit serum. Further, such urine, or the protein obtained from it, when injected repeatedly into rabbits, does not cause the rabbits' serum to react with either egg white or the isolated urinary protein. He believes that a negative precipitin test does not necessarily indicate the absence of the protein for which the serum used in the test is specific.

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* From the Pathological Laboratory of the University of Chicago.

[1] Compt. Rend. Soc. Biol., Paris, 1901, liii, 51.

[2] Deutsch. med. Wchnschr., 1901, xxvii, 161.

[3] Deutsch. med. Wchnschr., 1901, xxvii, 219.

[4] Münch. med., Wchnschr., 1902, xxvi, 734.

[5] Deutsch. med. Wchnschr., 1900, xxvi, 734.

[6] Münch. med. Wchnschr., 1903, l, 201 and 1761; Ascoli and Vigano: Zeit. physiol. Chem., 1903, xxix, 283.

[7] Inouye: Deutsch. Arch. klin. Med., 1903, lxxv, 378; Croftan: Arch. of Diag., New York, October, 1908.

[8] Jour. Physiol., 1909, xxxvii, 155.

More recently Wilson[9] has applied the fixation of complement test to the detection of the nature of the albumin in human urine. This reaction is as specific as the precipitin reaction, and much more delicate, a reaction being obtained with as little as 0.00001 c.c. of human serum. Applied to urine it was found to be from 10 to 100 times more delicate than the nitric acid test, so that it was possible by this means to detect albumin in urine when there was no sign of albumin by chemical tests. He finds that the main protein element of albuminous urine has a human antigen, and therefore is presumably human protein, but he seems not to have sought for the presence of other proteins in either nephritis or alimentary albuminuria.

There exists not only a scientific interest in this question of alimentary albuminuria, but there is also some practical bearing, for it might at times be desirable to ascertain whether the albumin in a given sample of urine represents food protein or blood protein. While the precipitin test is of distinct value, yet its application is not readily made without more or less experience in immunologic work, and requires a good deal of time and labor in immunizing animals and preparing the specific serums. It therefore seemed possible that the anaphylaxis reaction might be found serviceable in this connection, in view of its simplicity and its delicacy, since a guinea-pig may be successfully sensitized with a dose of one-millionth of a gram of egg albumin, or even less. One has only to inject the urine, either fresh or preserved by chloroform, into the peritoneal cavity of a medium sized guinea-pig, best weighing 300 and 500 grams, and two weeks or more later inject intraperitoneally the sort of protein suspected of being in the urine. For the first or sensitizing dose of urine, from 1 to 5 c.c. according to the amount of albumin present, is a suitable dose; for the intoxicating dose, from 2 to 5 c.c. of ascites fluid or human serum, or a corresponding amount of egg white, is a proper amount.

The first experiment performed was as follows:

Experiment 1.—A healthy young man, whose urine contained no albumin by either the heat or the nitric acid tests, took three raw eggs for breakfast (8 a. m.), after having abstained from food containing eggs for three days. Urine passed at 10:30 a. m. contained no albumin by either heat or nitric acid tests. At 1:15 p. m. six more raw eggs were eaten. Urine passed at 1:30 p. m. contained no albumin. Urine passed at 3 p. m. gave a barely perceptible reaction for albumin; that passed at 6 p. m. gave a distinct reaction, and 8 p. m. again only a trace could be detected. Guinea-pigs were injected with doses of from 10 c.c. to 1 c.c. of each of these samples, and 16 days later they were again injected with either egg white or human ascites fluid.

The results were as follows: Injection of egg albumin into these pigs sensitized with urine caused no symptoms whatever, no matter what sample of urine or what dose had been used in sensitizing; in all, this was done to fifteen guinea-pigs with negative results. Neither did the specimen of urine containing the largest amount of albumin (6 p. m. sample) cause anaphylaxis symptoms when injected in 10 c.c. doses into guinea-pigs that had been sensitized with egg albumin two weeks previously, although the same pigs were killed by egg albumin injected 24 hours after the urine injection. However, when other pigs that had been sensitized with this urine were injected with 3 c.c. doses of human ascites fluid, the results were striking. The pigs sensitized with the urine passed before eating the eggs showed no symptoms whatever, but those receiving urine passed later, even the 10:30 a. m. sample which showed no albumin by the heat or nitric acid tests, all reacted violently to the human proteins of the ascites fluid. Most of the animals died, and the remainder were severely ill with the characteristic symptoms of the anaphylaxis reaction. The pigs that had been tested with egg albumin, which caused no reaction, reacted to a subsequent dose of ascites fluid quite as violently as the pigs which had received no egg albumin, which shows the specific character of the sensitization for human serum proteins.

These experiments indicate that the proteins present in the urine of this particular individual, after eating a large amount of egg albumin, are serum albumin, and that no unaltered egg albumin has escaped in the urine.

This result was not in harmony with the finding of Ascoli, who, as stated above, finds that the urine in alimentary albuminuria reacts with antiserums for both human protein and for egg albumin. It has, therefore, been repeated with three other healthy individuals with exactly the same results, as shown by the following abstracts of the experiments:

Experiment 2.—A healthy young man went without eggs for a day, then took six raw eggs for breakfast (8 a. m.) and again four more eggs at 12:30 p. m. Urine passed before eating the eggs, and also that passed at 12 o'clock, gave no reaction for albumin with either the nitric acid or the heat tests. At 4 p. m., however, it gave a very faint reaction for albumin. Guinea-pigs were sensitized with urine from each of these specimens, in doses from 1 to 10 c.c., and 16 days later were injected with either egg albumin (crystallized) in 0.1 gm. doses or human ascites fluid in 3 c.c. doses. None of the pigs receiving the egg albumin showed any symptoms whatever, while all the pigs receiving ascites fluid reacted typically, and in most instances severely, although none died. The pigs that had failed to react with albumin, when injected 24 hours later with ascites fluid reacted typically, showing conclusively that the sensitizing substance in this urine was not egg albumin, but human protein.

It is to be noted that the guinea-pigs which received the urine passed before eating the eggs also reacted to ascites fluid, although this urine gave no sign of reaction for albumin by either heat or nitric acid.

Experiment 3.—A healthy man, aged 33, who had been taking arsenic in small doses (1/40 grain t.i.d.) for several weeks without showing any trace of albumin in the urine, took the whites of 6 raw eggs for breakfast at 8 a. m. Specimens of urine were collected at 10:30 a. m. and 12:30 and 2:30 p. m.; only the last gave a possible reaction for albumin and this was questionable. As before, guinea-pigs in pairs were injected with samples of each specimen of urine, in doses from 2 to 10 c.c., and 20 days later they were injected with either egg albumin (0.1 gm. doses) or ascites fluid (3 c.c. doses). As before, none of the pigs injected with egg albumin reacted at all, while all the pigs injected with ascites fluid, including those that failed to react to egg albumin, reacted severely and typically, although not fatally. A specimen of morning urine passed two days after eating the raw eggs, and which showed no trace of albumin, in 5 c.c. doses sensitized guinea-pigs to ascites fluid so that they reacted typically but not severely.

Experiment 4.—A healthy young man, aged 29, whose urine showed no traces of albumin, ate the whites of six eggs at 7:30 a. m. Urine passed at 12:30 p. m. and at 5 p. m. showed no traces of albumin by the nitric acid or heat tests. Six guinea-pigs were injected with the urine passed at 12:30 and at 5 p. m. Twenty days later three were injected with 0.1 gm. egg albumin each and showed no symptoms; three were injected with human ascites fluid, and all reacted typically, those having received the 12:30 p. m. specimen more severely than the one sensitized with the 5 p. m. urine. The pigs that had failed to react to egg albumin were injected the next day with ascites fluid, and reacted exactly the same as the pigs that had not been given egg albumin. Of two pigs sensitized with the urine passed before eating the eggs, one did not react distinctly to ascites fluid, the other reacted slightly.

Experiment 5.—Two specimens of albuminous urine were obtained from nephritics, one containing but a trace of albumin, while the other gave a dense coagulum on heating.

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[9] Jour. Path. and Bact., 1909, xiii, 484.

Guinea-pigs were injected with doses of these urines in quantities ranging from 10 to 0.1 c.c., and 19 days later they were injected with egg albumin or with ascites fluid. As before, the egg albumin had no effect, while the ascites fluid caused severe, frequently fatal intoxication, showing that the ordinary albuminous urine of nephritis contains human protein.

One fact noticeable in all the foregoing experiments was that animals which received 10 c.c. sensitizing doses of urine reacted less violently to the intoxicating dose of ascites fluid than the animals that received smaller doses of urine. This can not be explained as due to excessive quantity of protein in the sensitizing dose, for it was noticeable when the injected urine contained too little albumin to react with nitric acid. It is possible that urine, as well as other body fluids, contains substances that have an inhibiting effect on the anaphylaxis reaction, for in experiments performed with crystallized egg albumin and natural egg white it was found that unpurified egg white produced the reaction only when used in much larger doses than would be expected from its content of albumin;[10] contrasted with crystallized egg albumin the unpurified mixed proteins of egg white are about one-fifth as toxic for sensitized guinea-pigs, and but about one-hundredth as active in sensitizing.

A number of experiments were performed to determine the presence of protein in normal human urine by means of the anaphylaxis reaction. Morning urine from five healthy young men was injected into guinea-pigs in 1, 5 and 10 c.c. doses, and after an interval of three weeks human ascites fluid was injected in doses of 3 c.c. In nearly all cases the animals showed typical anaphylaxis symptoms of greater or less severity, but in only a few instances was the reaction fatal. From this it would seem that minute quantities of protein are present in the urine of normal individuals, and that this protein, which is too small in amount to be detected by the heat or nitric acid tests, possesses the specific properties of human proteins, like the proteins present in albuminuria.

SUMMARY

Although a few observers report having found evidence of the presence of specific food proteins in the urine in alimentary albuminuria by means of the precipitin reaction, yet by the anaphylaxis reaction the results are found to be quite different. Guinea-pigs sensitized with urine from four healthy persons with experimental alimentary albuminuria, produced by eating raw eggs, and with urine from two cases of nephritis, reacted typically and severely to subsequent injections of human ascites fluid, and not at all to egg white or to egg albumin. In view of the extremely minute quantity of protein necessary to sensitize guinea-pigs to the homologous protein, these results speak against the prevalent view that the albumin present in the urine in alimentary albuminuria is the same protein that has been taken in the food. Either the ingested and absorbed protein is altered to the extent of acquiring specific human properties before being eliminated in the urine, or else it is not excreted at all, but injures the kidneys slightly and transitorily by overloading the blood with nitrogenous waste products, so that they become permeable to the normal proteins of the serum. If the results of the anaphylaxis reaction alone were considered, the latter explanation would seem to be the most probable, but several observers report that the urine in alimentary albuminuria reacts with specific precipitins for the food proteins. This discrepancy between the results of experiments with the precipitin and the anaphylaxis reactions may be interpreted as meaning that the two methods are not of equal value in solving the problem, or it may be suggested that the precipitin reaction is given by food proteins that have been slightly altered during the processes of absorption and excretion so that they will not sensitize guinea-pigs to the original protein. However, experiments to be reported elsewhere show that digestion of proteins very quickly destroys their property of reacting with precipitins, while the anaphylactic properties of protein resist destruction by either peptic or tryptic digestion for a remarkably long time.

In any case, there can be no question that even in alimentary albuminuria, as well as in nephritis, the urinary proteins are chiefly, perhaps exclusively, human proteins, and, therefore, presumably derived from the blood rather than from the food. Whether any of the unaltered food protein reaches the urine is doubtful, because of the disagreement on this point of the anaphylaxis reaction and the precipitin reaction. Further comparative studies are needed to clear up this point, both because of the desirability of knowing just what relation the precipitin and anaphylaxis reactions have to each other, and because of the importance to the physiologist of definite information as to whether unaltered food proteins can pass through the intestinal wall.

On account of the delicacy of the anaphylaxis reaction it shows the presence of human proteins in urine from normal persons, which gives no reaction for albumin by the heat or nitric acid tests.

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[10] Jour. Infect. Diseases, 1908, v, 456.

A FEW POINTS ON PROPHYLAXIS OF TUBERCULOSIS

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It is important to prevent future generations from contracting tuberculosis by a thorough course of preventive medicine and hygiene taught in our public schools. Germs are everywhere, and it is essential not to disseminate the pathogenic varieties. Expectoration in the open air should not be tolerated.

We must treat properly the cases already under our observation. Individuals suffering with tuberculosis should be cautioned against marrying. If the married state hastens the progress of the disease, it is natural to believe that the offspring from a union of tuberculous individuals would also have a tuberculous tendency, very much as the children of inebriates have a tendency toward inebriety. The consensus of professional opinion, however, says that tuberculosis is not hereditary.

It seems reasonable that the system may be fortified to resist disease by conservative measures, such as the following:

1. Regular, temperate and cleanly habits.
2. Abundant sunshine and fresh air.
3. Good nourishing food.
4. Sufficient rest.

1. *Regular Habits.*—It is essential to observe regular and temperate habits and modes of living. A shiftless vagabond, exposed to the elements, depending on the kindness of charity, or a society rake living in the excesses of overabundance, will be more likely to contract tuberculosis than will active, industrious and sober individuals. Persons afflicted with what are supposed to be incurable diseases sometimes give themselves up to reck-

less riotous revelry in order to drown their troubles. This is a great mistake. The reason is self-evident.

2. *Sunshine and Fresh Air.*—The average individual in our cities gets far too little systematic exercise in the open air during favorable weather. Clerks and shopkeepers are housed from morning until night, year in and year out, in poorly ventilated and stuffy apartments. where the atmosphere is stale and charged with noxious and depressing exhalations from crowds. The majority of the working class shut up in shops, factories, stores and offices are constantly inhaling clouds of germ-laden dust. These individuals furnish a large portion of cases of tuberculosis. Indians have long been known to be susceptible victims of tuberculosis, not because they live in the open, but because of their lives in the dampness of rivers, canoeing, fishing and hunting. This prolonged exposure lowers lung resistance and favors irritation of the bronchial mucous membrane, paving the way for invasion of tubercle bacilli. This should put us on our guard in treating these sufferers. These patients can not very well be treated advantageously who persist in staying at home if the surroundings are damp. A moderately elevated location among the hills where the air is bracing and dry should be chosen for tuberculous patients. The tonic effect of dry ozone to be had among the pine hills and forests aids materially in arresting tubercular lesions. It assists Nature in the reconstructive process; in forming a barrier of fibroconnective tissue around the lesions, in limiting the extension of the destructive process and eventually obliterating it, while a new defensive army of phagocytes encounter the enemy face to face. We can not all live where it is best and most healthful for us, but those especially predisposed to disease should consider the matter of location seriously.

3. *Nourishing Food.*—This is of paramount importance in maintaining bodily strength. Food should be selected which contains the greatest possible amount of nourishment and reconstructive power, and which at the same time agrees with the digestive function of the individual in question. A reasonable amount of food of desirable quality should be selected rather than the greatest quantity for the money. Time should be taken to masticate it thoroughly, thereby avoiding distressing gastrointestinal disturbances. It can not be otherwise than harmful to impose the work of the teeth on the stomach. Gormandizing and gluttony, which often give rise to acute indigestion, should be avoided.

4. *Rest.*—This, too, is an important factor, yet is too often overlooked. The tired and overworked body needs re-energizing by refreshing sleep. Some individuals can get along on much less sleep than others. If one gets, on an average, eight hours' quiet and undisturbed rest each night, and observes the rules of hygiene already mentioned, one's vital powers should be amply reinforced to ward off almost any disease, even tuberculosis.

FOOD-POISONING BY CHICKEN SANDWICHES

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A few weeks ago eighty-three people gathered at a new barn seven miles north of North Platte at a dance. At 1 o'clock in the morning they were served with a lunch consisting of chicken sandwiches, cake and coffee. The chicken had been prepared the day before by being cooked, cooled and run through a sausage chopper. The weather was very hot and humid. The chopped chicken was kept over twenty-four hours before the sandwiches were made and eaten. The next day, about twenty hours after the supper, fifty-two people who had eaten the lunch were reported sick. Later several more reported, making the whole number about sixty. All who had eaten the chicken were sick, but those who ate cake and coffee and did not eat chicken were not affected. All these patients suffered practically the same symptoms, differing only in degree. They were taken with severe cramps in the bowels, followed by diarrhea and vomiting. Rise of temperature was present in every case that I examined, varying from 101 to 103½. Some were taken sick seven hours after eating the chicken; others were taken sick as late as twenty-four hours after. One man told me that he had taken two big drinks of whisky after the lunch and thought he had escaped any bad effects, but on placing a thermometer under his tongue I found his temperature to be 100.

None of the chicken could be obtained for bacteriologic examination but it is evident that bacterial infection, probably proteus or paratyphoid, was the cause of the poisoning in this case. Proteus as a rule, however, causes little or no fever but does cause severe gastro-intestinal symptoms. Clinically this outbreak resembled infection with the *Bacillus enteritidis* of Gartner. Bollinger states that four-fifths of meat-poisonings are caused by this bacillus but in this case the chickens were stated to have been in good health before being killed. Most cases of poisoning from the Gartner bacillus come from "emergency slaughtering," or where the animal has been killed because of disease.

Professor Dieudonné in his book on food-poisoning states: "Meat poisoning may be occasionally produced by the hay bacillus (*Bacillus subtilis*). An instance of this is reported by Lubenau, who observed an outbreak among the inmates of the Beelitz sanatorium, in 1906. About three-fourths of the 400 inmates and a large part of the help were affected shortly after eating meat croquettes. They had been served at the noon meal; at about 11 in the evening a large number of persons were seized with a profuse diarrhea, persistent vomiting, severe headache and great prostration. In two or three individuals fever was also present. Bacteriologic examination revealed the presence of a bacillus belonging to the hay bacillus group."

I believe it of considerable importance that these cases be reported and that bacteriologic examination be made in every case possible.

GOUTY AFFECTIONS OF THE NERVOUS SYSTEM

REPORT OF AN INTERESTING CASE

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Formerly the term lithemia was used to cover up our ignorance in regard to a number of affections of uncertain origin. We now know that there is no such disease, but we recognize some of the terms formerly included, of one of which I will report an interesting case.

History.—The patient was a white man, aged 32, married; occupation, telegraph operator. His father and mother were living and well; no history of rheumatism or gout. The patient had had the usual diseases of childhood and typhoid fever ten years before coming under observation. He has had periodic attacks of arthritis of the left knee for the past three years, accompanied by some swelling and tenderness; facial neuralgia for past three years, only slight.

Present Illness.—This began one year before the present attack, with slight headache, constipation, scanty urine and great nervousness. The patient suddenly awoke one night with agonizing pain in the lower right quadrant of the abdomen, nausea and vomiting. The next morning he walked to a physician's office, where two surgeons pronounced his case as one of appendicitis and advised immediate operation. This he refused. He stated that he had no fever, slow pulse, slight tenderness, no rigidity. Recovery was slow. A few months after this he had a second attack similar in every way to the first except that the pain was at the margin of ribs in mid-axillary line. The physicians called pronounced this hepatic abscess. The patient again refused operation and recovery ensued.

Examination.—On June 5, 1909, I found the patient suffering from agonizing pain, confined to the right nephritic region, headache, nausea, vomiting and great nervousness. There was some slight discoloration of the conjunctivæ; pulse was 68; temperature, 98.3; some slight tenderness over point of pain but no radiation. There was no rigidity. The kidney was not palpable; the liver was normal in size. Hot applications failed to relieve pain, and morphin was given. Urine was scanty, highly colored, depositing a heavy sediment on standing; sp. gr. 1028, acid, no albumin or sugar. Microscope gave quantities of mixed urates and uric acid crystals; no pus or blood cells. Blood count was normal. The Garrod string test was not applied.

Treatment.—This consisted in relieving the constipation by means of alkaline diuretics, careful dieting and copious draughts of water. Recovery was rapid and the patient states that he feels better than for the past year.

It will be noted that in no attack did he have fever, rapid pulse, pronounced tenderness or any rigidity; that headache, nausea, vomiting and extreme nervousness accompanied all and that each attack was preceded by constipation, headache and scanty, highly colored urine.

Such cases are interesting, not from their rarity, but from a diagnostic standpoint. We are too prone to consider every abdominal pain as indicative of appendicitis, cholelithiasis or ureteral calculus.

The periodic attacks of arthritis are entirely relieved by the salicylates, alkaline diuretics and hot applications. These attacks are not necessarily coincident with the other affection, but has given him some trouble during the last attack. The facial neuralgia has given the patient no trouble since the first attack of the present trouble.

TUBERCLE BACILLI IN THE BLOOD

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AND
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Drs. M. P. Ravenel and Karl W. Smith of Madison report[1] eighteen cases of tuberculous patients whose blood they examined by the Rosenberger method; they failed to demonstrate tubercle bacillus in the blood of a single case, and conclude: "This investigation has been confirmed by reports from all over the world, and the only conclusion that can be reached is that the Rosenberger method is of no value."

We wish to report ten such examinations, a number quite too small to warrant us in criticizing such an authoritative and conservative worker as Rosenberger, yet sufficient, we think, to permit us to question the above results and conclusions.

Case 1.—Clinical diagnosis, pulmonary tuberculosis; bacillary sputum.

Blood examination: Some microscopic fields, no tubercle bacilli; *others* had various numbers, the highest being nineteen in one field.

Case 2.—Patient had hip-joint disease three years before coming under observation, abscess formation; operation, recovery with fixation; *x*-ray shows partial destruction of head of femur and acetabulum. Physical examination and clinical symptoms negative.

Blood examination: Tubercle bacilli as high as nine in field.

Case 3.—Clinical and physical signs of pulmonary tuberculosis; sputum non-bacillary.

Blood examination: As many as 6 bacilli in one field.

Case 4.—A child with hip trouble; *x*-ray negative for osseous destruction. Physical examination negative.

Blood examination: Tubercle bacilli in blood.

Case 5.—A young man, now apparently healthy, although two years before coming under observation he was very much "run down." Afternoon and evening temperature as high as 101 F.; cough and loss of weight. Physical examination at that time and present, negative. Dozens of sputum examinations, also examinations of urine and feces, negative for tubercle bacilli.

Blood examination: As high as 10 tubercle bacilli in a field.

Case 6.—A patient with axillary adenitis. Pathologic report on removed glands, sarcoma.

Blood examination: Negative for tubercle bacilli.

Cases 7 and 8.—Positive findings. A diagnosis of typhoid fever has been made since. One of these cases at least is clinically typhoid. In each of these cases several hours' search revealed only a few bacilli.

Case 9.—This case had a provisional diagnosis of tabes dorsalis with an unexplainable temperature.

Blood examination: Positive for tubercle bacilli.

Case 10.—Pulmonary tuberculosis; bacillary sputum.

Blood examination: Positive.

Our technic is Rosenberger's improvement on what he originally used. The venous blood is smeared rather thickly on cleaned slides, dried, laked in distilled water, fixed, then stained with gently heated carbol fuchsin for five minutes, washed with water, decolorized with 25 per cent. nitric or sulphuric acid, then stained with methylene blue, or with Gabbet's solution used immediately after the carbol fuchsin. There is no doubt but that morphologically and tinctorially these were tubercle bacilli. If this technic does not demonstrate that these were not tubercle bacilli, then one cannot make a positive diagnosis of bacillary sputum without inoculation tests.

We do not wish to go on record as to the practical value of the Rosenberger method, but report our findings to encourage others to continue their labors, for the subject certainly can not be considered a closed one.

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[1] Proceedings of the State Medical Society of Wisconsin, reported in The Journal A. M. A., Aug. 21, 1909, liii, 649.

New and Nonofficial Remedies

Since the publication of the book "New and Nonofficial Remedies, 1909," the following articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections to aid in the revision of the matter before publication in the book are asked for.

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that so far as known it complies with the rules adopted by the Council.

W. A. PUCKNER, Secretary.

TRANSFER OF AGENCY

Triferrin and Triferrol (see New and Nonofficial Remedies, 1909, p. 134 and 135), formerly sold by C. Bischoff & Co., New York, are now sold by Knoll & Co., New York.

MASSOLIN—Cultura Bacilli Bulgarici-Lederle.—Massolin is a pure culture of the *Bacillus bulgaricus* of Massol, grown on one of the following media: Calcium carbonate lactose broth, calcium carbonate dextrose broth, calcium carbonate Cohendy broth, or Cohendy broth.

The material for one of the above broths is sterilized for thirty minutes on three successive days and then placed in the incubator for at least forty-eight hours to determine its sterility before using. The material is then put into large flasks, inoculated from test tube cultures of the bacillus and incubated at 37 C. (98.5 F.) for from twenty-four to ninety-six hours. It is then tested to see that it is free from contaminating organisms.

The preparation is of an amber color and has the odor and taste of the particular medium employed as its base.

The material should be inoculated into milk and into the above media in test tubes and smeared on Cohendy agar. The cultures should be examined microscopically for the detection of contaminating organisms.

Actions and Uses.—The culture tends to prevent the growth of putrefactive and pathogenic organisms. It is said to be useful in the treatment of suppurative conditions and is said to have been found especially beneficial in atrophic rhinitis, chronic nasal catarrh, inflammations of the frontal sinus, antrum, ethmoidal cells, middle ear, etc.

Dosage.—The culture should be liberally applied directly to the diseased area and in ordinary nose and throat affections the contents of one bottle 7.5 Gm. (¼ ounce) may be employed at each treatment.

Manufactured by Lederle Antitoxin Laboratories, New York (Schieffelin & Co., New York).

No patent or trademark. U. S. Government License No. 17.

CALCIUM LACTATE—Calcii Lactas.—Calcium lactate, Ca $(C_3H_5O_3)_2.5H_2O$, is the calcium salt of lactic acid.

It is prepared in the manufacture of lactic acid by the lactic acid fermentation of sugar or by the neutralization of lactic acid by calcium carbonate.

It occurs in white crystalline masses or powder, odorless and tasteless. It is soluble in 9.5 parts of water, easily soluble in hot water. At 100 C. (212 F.) it loses water of crystallization.

If calcium lactate is heated gently with a mixture of sulphuric acid and potassium permanganate the odor of aldehyde will be given off. An aqueous solution of calcium lactate will throw down a white precipitate, insoluble in water and acetic acid, on the addition of a solution of ammonium oxalate.

Actions and Uses.—Calcium lactate has the pharmacologic action of other calcium salts. Being less irritating than the chloride, it may be given subcutaneously. It is used to increase the coagulability of the blood.

Dosage.—0.5 to 4 Gm. (7 to 60 grains).

TANNISMUTH—Bismuthi Bitannas.—Bitannate of Bismuth. Tannismuth is the bismuth salt of tannic acid in which approximately one atom of bismuth is combined with two molecules of tannic acid having approximately the formula Bi $(OH)(C_{14}H_9O_9)_2$ and containing between 17 and 21 per cent. bismuth.

It is a light yellow powder with slightly astringent taste, insoluble in water, soluble in cold caustic alkalies, and in diluted hydrochloric acid.

Actions and Uses.—It is claimed that one molecule of the acid becomes operative immediately after ingestion, e the other is slowly separated and prolongs the astrin- action throughout the entire length of the alimentary nal.

It is said to be useful in chronic intestinal catarrh, involving different portions of the intestinal tract.

Dosage.—0.3 to 0.6 Gm. (5 to 10 grains) three to five times daily.

Manufactured by Chemische Fabrik von Heyden, Radebeul near Dresden, Germany (The Heyden Chemical Works, New York). German patent No. 172,933. U. S. trademark No. 36,916.

PEROXIDE ZINC SOAP—Sapo cum zinci peroxido.—Peroxide Zinc Soap is a soap containing 10 per cent. zinc peroxide, which see.

Actions and Uses.—It is said to be useful as a vehicle for employing zinc peroxide in the treatment of skin diseases.

Prepared by J. Eavenson & Sons, Camden, N. J., for the Roessler & Hasslacher Chemical Co., New York. U. S. patent No. 787,776. No trademark.

HOMATROPINE HYDROCHLORIDE—Homatropinæ Hydrochloridum.—Homatropine Hydrochloride, $C_{16}H_{21}NO_3HCl$, is the hydrochloride of the alkaloid homatropine, obtained by the condensation of tropine and mandelic acid.

Homatropine hydrochloride occurs as small white crystals, soluble in water and alcohol and melting at 216 to 217 C. (420.8 to 422.6 F.).

If sulphuric acid containing a trace of potassium dichromate be added to a crystal of the salt an evanescent pink color will be produced which rapidly changes to green. If 0.01 Gm. of the salt be added to 5 drops of nitric acid and evaporated to dryness in a porcelain dish the residue should not acquire a violet red color upon the addition of a few drops of alcoholic potassium hydroxide test solution (absence of atropine, hyoscyamine or hyoscine). If 1 c.c. of an aqueous solution of the salt (1 to 100) be made alkaline with ammonia water, shaken out with chloroform and the chloroformic solution evaporated to dryness, the residue should turn yellow and finally brick red when warmed with about 1.5 c.c. of a solution of 1 part mercuric chloride in 30 parts of a mixture of 5 volumes alcohol and 3 of water. (absence of most other alkaloids except atropine and hyoscyamine). If to an aqueous solution containing 0.1 gm. of the salt an excess of potassium hydroxide test solution be added, liquid extracted with ether and the latter evaporated spontaneously, the crystals which form should melt at 96 C. (204.8 F.).

Actions and Uses.—Homatropine is less poisonous than atropine, but the same symptoms are produced by it when exhibited in large doses.

The hydrochloride is used as a mydriatic in ophthalmic surgery. The mydriatic effect begins in ¼ to ½ hour and reaches a maximum in one hour and disappears in 36 to 48 hours. Accommodation paresis ceases earlier.

Homatropine hydrochloride is given for the same indications as the hydrobromide, but has no advantage over the latter.

Dosage.—It is applied to the eye in 1 per cent. solution.

THEPHORIN—Theobrominæ Sodio-Formas. — Theobromine Sodium Formate. Thephorin $C_7H_7N_4O_2Na+NaCHO_2,+H_2O$ is a double salt of sodium formate and theobromine sodium.

It is prepared by dissolving 70.1 parts of theobromine sodium in 200 parts of water and adding to it a solution of 23.5 parts of anhydrous sodium formate in 50 parts of water, filtering the mixture, and evaporating to dryness on a steam bath or in vacuo. Thephorin is a white, odorless powder having a saline bitter taste and is readily soluble in water producing an alkaline solution. From its aqueous solution the theobromine is precipitated by acetic acid. In the filtrate formic acid is indicated by the reduction of silver nitrate.

If an aqueous solution of thephorin be faintly acidulated with nitric acid, the filtrate should give no precipitate with barium chloride, nor with silver nitrate, nor with ammonia water and hydrogen sulphide.

Two Gm. thephorin are placed in a porclain dish and dissolved in 10 c.c. water with the aid of gentle heat. A few drops of phenolphthalein test solution are placed in the solution, neutralized with nitric acid, the faint alkaline reaction is again restored by means of diluted ammonia, the solution is then thoroughly stirred and, with frequent stirring, allowed to stand for three hours at ordinary temperature.

The resulting precipitate collected on a weighed filter of 8 cm. diameter, is dried at a temperature of 100 C.; it is then washed twice with cold water using 10 c.c. each time. The filter is again dried at a temperature of 100 C. and weighed. The weight of the precipitate should amount to 1.2 gm.

Actions and Uses.—Thephorin is said not to irritate the stomach and acts as a powerful diuretic, both on account of the theobromine which it contains and also from the action of sodium formate.

It is said to be useful in cardiac affections, nephritis, dropsy, etc.

Dosage.—0.5 Gm. (7½ grains) two or three times a day in the form of powder or as tablets.

Manufactured by F. Hoffmann-LaRoche & Co., Basel, Switzerland (The Hoffmann-LaRoche Chemical Works, New York). U. S. patent No. 172,932. U. S. trademark No. 59,581.

Thephorin Tablets, 7 1/2 grains: Each tablet contains thephorin 0.5 gm. (7½ grains).

BENZOSALIN—Methylis Benzoyl-Salicylas. — Benzoyl-Salicylic-Acid-Methylester—Methyl Benzoyl-Salicylate. Benzosalin, $C_6H_4.O(CH_3).COO(C_6H_5CO)$, 1:2 $= C_{15}H_{12}O_4$ is the methylester of benzoyl salicylic acid.

Benzosalin is prepared by a reaction between the methylester of salicylic acid and benzoyl chloride in the presence of sodium hydroxide. The resulting product is washed with water and after drying is crystallized out from alcohol.

Benzosalin consists of fine, white crystals with a very faint aromatic odor. It melts at about 85 C. (185 F.). It burns leaving no residue. It dissolves readily in chloroform, benzene and in 35 parts of 90 per cent. cold alcohol, also in pure concentrated sulphuric acid.

Actions and Uses.—Benzosalin is said to pass the stomach unchanged and to be decomposed into its constituents, benzoic and salicylic acid in the intestines. It is said to be free from the undesirable by-effects of salicylic acid. It is claimed that benzosalin is an intestinal antiseptic.

Benzosalin is said to be useful in rheumatic affections, such as arthritis, neuralgia, sciatica and migraine, and in arthritis deformans.

Dosage.—0.5 to 1 Gm. (7½ to 15 grains). Daily dose 3 to 4 Gm. (45 to 60 grains) in powder or tablets.

Manufactured by F. Hoffmann-La Roche & Co., Basel, Switzerland. (The Hoffmann-La Roche Chemical Works, New York.) U. S. patent No. 799,706. U. S. trademark No. 58,757.

Benzosalin Tablets, 5 grains: Each tablet contains benzosalin 0.3 Gm. (5 grains).

FERROUS LACTATE—Ferri Lactas.—Iron Lactate—Ferrum Laticum. (U. S. P., 1890; Pharm. Germ., edit. 4; Pharm. Helvetica, edit. 4; Pharm. Belgica, edit. 3; Pharm. Francaise, 1908); Ferrous lactate, Fe $(C_3H_5O_3)_2+3H_2O$ is the ferrous salt of lactic acid.

Ferrous lactate occurs in pale greenish-white crusts, consisting of small, needle-shaped crystals, or transparent green scales, having a slight, peculiar odor and a sweetish, ferruginous taste. It is slowly soluble in about 40 parts of cold, and in 12 parts of boiling water; almost insoluble in alcohol; freely soluble in a solution of an alkali citrate yielding a green solution.

When strongly heated, the salt froths, gives out dense, white, acid fumes, chars and finally leaves a brownish red residue.

The aqueous solution of the salt has a *greenish-yellow* color, a slightly acid reaction, and gives a deep blue precipitate with potassium ferricyanide, and a light blue one with potassium ferrocyanide.

A 2 per cent. aqueous solution of the salt should not yield more than a faint opalescence with a solution of lead acetate (limit or absence of sulphate, chloride, citrate, tartrate and malate). The aqueous solution after acidulation with hydrochloric acid should not yield any precipitate or coloration when treated with hydrogen sulphide (absence of foreign metals).

The aqueous solution, acidulated with nitric acid, should not afford more than a slight opalescence with barium chloride solution or with silver nitrate solution (limit of sulphate or chloride). If 25 c.c. of a 2 per cent. aqueous solution of the salt be mixed with 5 c.c. of diluted sulphuric acid, the mixture boiled for a few minutes, an excess of sodium hydroxide added and the mixture filtered, the filtrate when mixed with a few drops of alkaline cupric tartrate solution and boiled, should not yield a red precipitate (absence of sugar).

If a portion of the salt be triturated with strong sulphuric acid, no offensive odor should be developed (absence of butyric acid), nor should any gas be evolved (absence of carbonate), and the mixture after standing for some time should not assume a brown color (absence of sugar, gum, or other readily carbonizable impurities).

If 1 gm. of the salt, contained in a porcelain crucible, be moistened with nitric acid and carefully ignited, it should leave a residue of ferric oxide weighing not less than 0.270 nor more than 0.278 Gm. This residue should not have an alkaline reaction on litmus paper, nor yield anything soluble to water (absence of foreign salts).

Actions and Uses.—Ferrous lactate is a mild chalybeate which because of its feeble taste may be taken without difficulty.

Dosage.—0.08 to 1.3 Gm. (1 to 20 grains). Owing to its liability to oxidation, it is best prescribed in solutions containing much sugar. Syrup dissolves 1 Gm. in 120 Gm. (4 grains to the fluidounce).

**DIGALEN—*Liquor Digitoxini Solubilis.*—*Digalen is a mixture said to contain 1 part of Digitoxinum Solubile Cloetta,[1] in 1,000 parts of glycerin and 1,600 parts of distilled water with 7.5 per cent. of alcohol. 1 Cc. is said to contain 0.0003 Gm. of Digitoxinum Solubile Cloetta.

Digitoxinum solubile Cloetta is manufactured as follows:

The dried and finely powdered leaves of digitalis are extracted with dilute alcohol: then the extract is mixed with lead acetate *solution in order to remove chlorophyll and resins and filtered.* From this filtrate the excess of lead is precipitated with sodium sulphate and the alcohol distilled off in vacuo. From the remaining aqueous solution the substance is extracted by ethereal solvents and precipitated afterwards in an amorphous and pure condition according to a special secret method.

Digalen is a colorless or slightly yellowish fluid of an agreeable aromatic smell and a sweet taste which turns bitter afterwards.

Digitoxinum Solubile Cloetta is described as an amorphous, white or slightly yellow powder. Its solubility is said to be about five times as great as that of crystallized digitoxin. It dissolves very readily in alcohol and choloform and a little less readily in ether. It has an intensely bitter taste and causes violent sneezing. It is claimed to be the form in which digitoxin exists in the digitalis leaf before it is deposited in a crystalline and insoluble form.

In order to test for the active principle in digalen a few drops of dilute acetic acid are added to 2 c.c. of digalen solution and then the mixture is shaken out with chloroform. This solution is evaporated and the residue dissolved in about 2 c.c. of glacial acetic acid containing traces of iron chloride. If to this solution concentrated sulphuric acid is added cautiously without mixing, so as to form a separate layer at the bottom of the test tube, a small brown ring will form first between the two layers which becomes broader in the course of some hours and expands towards the top of the tube in a blue green to black shade and towards the bottom of it in a reddish brown one, while the acetic acid acquires finally a dark green-blue color.

The amorphous character of the digitoxin contained in digalen is proved by the following tests: Dissolve 4½ mg. digitoxin amorphous (the entire content of digitoxin amorphous of an original vial of digalen) in 0.225 c.c. of 96 per cent. alcohol. Place the same quantity, 4½ mg. of crystallized digitoxin, also in 0.225 c.c. alcohol 98 per cent.

The amorphous digitoxin dissolves readily to form an entirely clear solution. The crystallized digitoxin, however, dissolves slowly and incompletely. This solubility difference is still more marked if diluted alcohol is employed.

A drop of the clear filtered alcoholic solution of amorphous digitoxin leaves no crystallin residue on evaporation, but a solution of crystallin digitoxin shows on evaporation an active separation of minute, sharp and distinctly formed crystals arising especially on the edge of the drop.

Actions and Uses.—The same as Digitoxin.

(See Jour. A. M. A., May 8, 1909, p. 1499.)

Dosage.—Average single dose 1 Cc. (16 min.) Maximum single dose 2 Cc. (32 min.), maximum daily dose 6 Cc. (96 min.) Intravenous injections of 1 Cc. (16 min.) may be repeated at intervals of one-half to one hour as necessary. For protracted dosage from 1 to 2 doses daily of from 7 to 14 drops are given.

Manufactured by F. Hoffmann-LaRoche & Co., Basle, Switzerland. (The Hoffmann-LaRoche Chemical Works, New York.) U. S. trademark No. 43,593.

Therapeutics

CHRONIC NEPHRITIS

Chronic interstitial nephritis, Bright's disease, or better named under the clumsy but more descriptive title of cardiovascular-renal disease, is markedly on the increase in this country; consequently, it is necessary for the medical profession to take means of preventing its occurrence. It is unimportant for the discussion of its prevention which part of the anatomy of the individual patient has farthest advanced in the pathologic process. One patient may have arteriosclerosis greatest in evidence, another cardiac weakening, another renal disturbances, but the disease in any case is the same. Increased blood tension seems to be the premonitory condition and the forerunner of all subsequent disturbances in this cardiovascular-renal disease.

A question that has been considerably discussed is: What is the etiology of this increased blood tension? The condition has been variously attributed to tension caused by increased nervous activity; to hypertrophy of the left ventricle, which, however, is probably generally compensatory to overcome the increased arterial pressure; to the circulation in the blood of toxins absorbed from the intestines, which irritate the vessel walls and the central nervous system; to toxins retained in the blood from insufficient excretion by the kidneys; and to a hypersecretion of the vasoconstrictor element of the suprarenals, or to a relatively increased secretion from these glands, at a period of life (after fifty) when the thyroid furnishes a diminished secretion and therefore less vasodilator stuff. It is probable that all or several of these elements, which cause arterial irritation, are at work at once, and there probably is no one cause for a slowly developing endarteritis, increased blood pressure, and a future arteriosclerosis. The parts that chronic lead poisoning, syphilis and its treatment with mercury, serious acute infections, prolonged serious illness, alcohol and the ever frequent over-use of tobacco have played in causing the signs of beginning sclerosis must all be taken into consideration, when the attempt is made to prevent the development of, or to stay, the pathologic process.

It is manifestly impossible to prevent the serious conditions that have gone before, viz., acute illness, syphilis, mercury and lead. It is possible to prevent the continuation of causes that are continuously acting in the individual patient, such as alcohol, tobacco, over-eating, intestinal indigestion, and the nervous tension caused by an excessive amount of mental labor, or by the strenuous life that the patient may be leading.

In this insidious, creeping and almost sneaking disease it is obviously important to recognize early its premonitory symptoms and signs. Not infrequently it is the oculist who is consulted for disturbances of vision, who first notes arterial changes in the retina. The symptoms which the patient has and which he may take note of, or, on the other hand, take no notice of, are: a slight tendency, or an increased tendency, to headache; slight headaches on first awakening in the morning; some early muscle debility in the morning, which soon passes away, as does the headache; at times, some pain in the occipital region; occasionally intermittency of the heart, sometimes an increased force of the beat, especially on first lying down; sometimes slight attacks of palpitation and dyspnea after exertion that should not cause cardiac disturbance; at times, on exertion, a peculiar paleness about the mouth; at other times flushing of the face; slight puffiness of the ankles at night, not real edema; a sensitiveness of the skin to slight irritation, so that rubbing or scratching causes an intense local hyperemia that may persist for some minutes; at times occasional digestive disturbances, nausea and vomiting attacks; frequently a coated tongue and a bad taste in the mouth in the morning; possibly a little diarrhea without adequate food, cold, or inflammatory excuse; days of increased frequency of urination; and the tendency to be awakened once, perhaps twice, at night to urinate. These symptoms may bring the patient to the physician, but often do not. In some instances it is the increased frequency of urination at night, or an irritability of the bladder, or a general weakening of the patient from circulatory debility, or actual cardiac distress with possibly slight anginal attacks, that cause the patient to consult his physician.

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[1] The Council has not determined whether digalen contains "soluble amorphous digitoxin" or not, but accepts it merely as a standardized soluble and fairly stable digitalis preparation.

Besides the above symptoms, the physician finds either increased pulse tension, or, in many instances, a pulse tension that was increased has become lowered from slight cardiac weakness, before the patient has consulted him. In all cases, the blood pressure should be taken and noted, and circulatory treatment directed according to the reading. The physician will often find an intermittency, sometimes an irregularity, of the heart, often slight enlargement, and at times a soft systolic blow at the apex, showing weakness and a slight dilatation of the left ventricle. If there is a systolic blow at the aorta, there may be a slight roughening of this valve, or the sound may be of hemic origin, even if the patient is not anemic; in other words, either one of these cardiac murmurs, the aortic or the mitral, may disappear under proper treatment.

The physician may note an abnormal tendency of the veins of pendent portions of the body (especially of the hands when hanging down) to become dilated, showing some circulatory insufficiency. This may be due to slight arteriosclerosis, or it may be due to cardiac weakness.

The tongue may show varying signs of digestive disturbances or an irregular, patchy, coated condition which is typical of renal insufficiency.

The urine may be of low specific gravity, may contain a trace of albumin, and may show hyaline and granular casts, but all these important urinary findings may be absent. It is essential to examine several specimens of the twenty-four hours' urine to determine the ability of the kidneys to excrete not only nitrogen, but salts. The results of these examinations will decide the modifications of the diet that are necessary.

The results of the examination of the circulation will determine the amount of rest that is necessary, or the amount of exercise that should be allowed.

Drs. N. E. Ditman and W. H. Welker, New York, in a series of articles in recent numbers of the *New York Medical Journal*, ending June 5, 1909, have scientifically presented the symptoms, etiology and treatment of nephritis. They make the statement that in a large proportion of instances this disease is preventable, and certainly ordinarily in its incipiency it may be stopped or stayed. If the patient comes to the physician when the above symptoms only are present, prophylactic measures to prevent the further development and progress of the disease are presented as follows by Ditman and Welker:

Alcohol.—The pernicious effects of alcohol in causing nephritis is attributed generally to its interference with oxidation, and imperfect oxidation is considered by these experimenters to be a distinct cause of nephritis. Consequently, as has long been theoretically known, patients with early signs of cardiovascular-renal disease must not take alcohol in any form.

Cold.—The climate of the temperate zone is more conducive to the development of nephritis than are zones where it is colder and zones where it is warmer. The rapid variations in temperature experienced in temperate climates cause marked changes in the tone of peripheral vessels. Sudden cold raises the blood pressure, inhibits excretion by the skin, and puts more work on the kidneys. For this reason the patient with a beginning chronic nephritis should live during the colder and variable seasons of the year in a warmer climate, if he has the money ability. If he has not the financial means to change his abode, he should be so clothed as to prevent the surface of his body from becoming chilled. Ditman and Welker believe these sudden changes of temperature from warm to cold interfere with oxidation, and for this reason cause kidney irritation.

Exercise and Baths.—The authors believe that exercise for those who devote most of their time to business and its worries, or household duties and frets, and who eat hurriedly, is essential for proper oxidation and, therefore, should enter into the prophylactic treatment of nephritis. Outdoor exercise, plenty of sunlight and sun baths, especially when applied to the whole body, are of great benefit to the patient who is on the verge of arteriosclerosis, chronic nephritis, and their associated conditions. For some patients frequent warm baths and Turkish baths are indicated. This is especially true for the patient who is over-weight, and for the patient whose skin does not normally perspire and therefore does not normally excrete. If the heart is impaired, Turkish baths should not be taken.

Food.—Over-eating of protein nutriment is certainly a promoter of the causes of arteriosclerosis and chronic nephritis. This is especially true if the intestinal digestion is imperfect. Meat, especially, is the protein that is most likely to produce toxins, if maldigested, and if putrefaction occurs in the intestines. Therefore, a patient, who is on the verge of or has a beginning, chronic nephritis, should eat meat but once a day, and that in not large amount. It may be well to take meat out of the diet for a short period, at least. Raw meats, raw oysters, and especially the proteins that contain large amounts of nuclein, as liver and pancreas, should be eliminated from the diet. Meat broths and meat soups that contain a large amount of extractives should be avoided.

Intestinal Putrefaction.—While it is probably not true that if the colon of the human being after forty could be removed he would live to be a hundred, more or less, it certainly is true that intestinal putrefaction, whether mostly in the colon or more or less in the small intestine, is conducive to the absorption of toxins that are irritant not only to the arterial walls, but specifically to the kidneys, and such irritants have been found to promote albuminuria and chronic interstitial nephritis. Any food, diet, regulation of habits, physical or medicinal treatment that will prevent or inhibit intestinal putrefaction will promote the prophylaxis of chronic nephritis.

The primary treatment of this condition is catharsis, followed by such laxative treatment as will keep the intestinal contents normally moving. Radical changes in diet will change the pabulum which aids the growth of the obnoxious bacteria.

Artificially soured milk seems to be a successful treatment of many cases of intestinal putrefaction. Yeast is another valuable treatment of this condition. The so-called intestinal antiseptics are of some advantage and sometimes are curative.

The prevention of the condition, or the prevention of its recurrence after it has been stopped, should begin with proper filling, or extracting, decayed teeth, and frequent and repeated cleansing of the teeth, mouth and throat with such mildly antiseptic or alkaline gargles as are deemed advisable, and the limitation of the food to such articles as are easily and well digested by the particular patient. Foods that tend to carry bacteria and that promote putrefaction should be prohibited, and Herter especially prohibits cheese and the skins of fruit.

Dilute hydrochloric acid is a valuable treatment, if indicated.

Ditman and Welker believe that quantitative determination of the creatinin eliminated will denote the condition of the digestion and the amount of maldigestion and suboxidation, and therefore the likelihood of the development of nephritis.

TREATMENT OF NEPHRITIS WHEN ACTUALLY PRESENT

The above suggestions for prophylactic measures should all be enforced, and Ditman and Welker emphasize the fact that all the methods of treatment, physical and medicinal, found of advantage in chronic nephritis and uremic conditions, are those that tend to promote oxidation in the body.

They have investigated the indican and creatinin excretion in reference to the presence of such symptoms as high tension, headache, lassitude, nausea and vomiting, edema and dyspnea, and find that the arterial tension seems to be increased when there are large amounts of indican in the urine and when the excretion of creatinin is reduced. Also the greater the amount of indican the more the headache, and the less creatinin excreted the more the lassitude, nausea and vomiting. Dyspnea and edema seem to have no relation to the indican or creatinin.

Patients with chronic interstitial nephritis do not excrete sodium chlorid well, and this retention seems to cause edema; hence if there is edema in chronic nephritis the sodium chlorid intake should be reduced, or it should be entirely withheld for a time. Albuminuria is also decreased, when present, by a saltless diet.

The diet in chronic nephritis should be carefully considered. An absolute milk diet is inadvisable. A large amount of water is inadvisable. The amount of meat allowed depends on the ability of the kidneys to excrete nitrogen. There is no difference in the extractives or in the ability of the kidneys to excrete the extractives of ingested red or white meat. The main object in the diet of the nephritic is that he should have a little of all the elements that are necessary for nutrition, nothing that causes indigestion or serious constipation, nothing that has been found by chemical analysis of the urine to be difficult of excretion by the kidneys, and enough food to keep the weight as near normal as possible. He may therefore have some milk, if it agrees; water sufficient to keep the excretions normal, but not sufficient to cause edema, nor in large amounts, if the arterial tension is high, or if he has arteriosclerosis; meat in small amount once a day; eggs; oatmeal, or other cereal; bread, potatoes and other fresh vegetables (no canned food); non-irritating, preferably cooked, fruits; all depending entirely on his ability to digest properly and to excrete the end-products of each particular food. As uric acid is not ordinarily well excreted by kidneys which are in the condition of interstitial nephritis, the purin bases and all such foods as contain large amounts of nuclein should be prohibited, typically liver. Also, all spices and often tea and coffee should be withheld from the diet.

The care of the skin in the nephritic is of special importance. Proper exercise should be taken to cause normal perspiration; warm baths and massage promote normal excretion by the skin. If the skin is a normally excreting organ in the patient who has chronic nephritis he may do well for years. If the skin is dry, diseased and does not properly excrete, he will soon have uremic symptoms.

No drug of any kind that causes irritation of the kidneys during its excretion should be administered to a patient with chronic nephritis.. Such drugs are all of the coal-tar products, some of the vasoconstrictors, the stimulant and irritating diuretics, the aromatic oils, and many of the synthetic compounds.

As most nephritic patients are, or soon become anemic, iron in some simple form should be administered, and there is no better iron for this purpose than the tincture of the chlorid, in from 1 to 5 drop doses, in a little fresh lemonade, administered two or three times a day.

It has been shown that the alkalinity of the blood is diminished in patients who are suffering from chronic nephritis. Consequently, the alkalies seem indicated and have long been found of some advantage to these patients. Alkalies are also promoters of oxidation. It should not be forgotten, however, that if they are long administered they may promote tissue waste and therefore loss of weight. While also they are diuretics, diuretics are not always indicated in nephritis, even when the amount of urine passed is small, as injured kidneys do not need stimulation of any kind, but rather derivation such as would be produced by cathartics and by hot baths. Also, urine that is abnormal in its constituency tends easily to have its normal acidity reduced and become neutral or even alkaline, in which conditions bacteria grow and infectious disturbances start, and slight inflammation from infection can occur in any part of the urinary passages. In this condition alkalies would promote and not diminish the growth of bacteria, hence would be contraindicated.

Colon irrigations, to wash out fecal débris and cleanse the large intestine of bacteria, are especially indicated when there are any symptoms showing that uremia may be imminent. When the symptoms show that the patient is about to have an uremic attack, purgatives, hot baths, colon washings, almost total abstinence from food for twenty-four hours, the administration of water, or a small amount of milk and water only, and absolute rest in bed is the best possible preventive treatment.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 11, 1909

INFANT MORTALITY

Probably nothing is more fatal to real progress than a mistaken idea that such progress has already been accomplished. Such assumptions are too common. For instance, there is a very general impression that in the past twenty-five years we have greatly reduced the death rate among infants. Such statistics as are available, however, apparently indicate that whatever advance has been made in lessening infant mortality is due chiefly to the improvement in general living conditions. Dr. Stowell,[1] visiting physician to the New York City Children's Hospital and Schools, in a review of mortality tables for recent years, presents some facts that are rather startling, considering the usual impressions as to our great advance in the prophylaxis of infants' diseases.

The death rate of infants under one year per thousand living, as given by Dr. Stowell, shows very little change in the last thirty years in nearly all the civilized countries. In England, for instance, during the five years from 1876 to 1880, the death rate at this age was 145 per thousand. In the decade from 1893 to 1902 it was 152 per thousand living. In France the figures for the two corresponding periods are 163 and 158; in Prussia, 205 and 199; in Italy, 249 and 173; in Switzerland, 189 and 145, and in the United States, 166 and 165.4. The only country that shows a material reduction in the death rate at this age (and perhaps the last one from which it would be expected) is Italy. There is a good reduction in Switzerland, but that has been made in the last few years, as the death rate under one year in 1895 was higher than that in 1876. In the United States the census figures on this subject are very interesting. The deaths of infants under one year are calculated per thousand deaths in the United States. They run as follows: In 1860, 207; in 1870, 209; in 1880, 231; in 1890, 234; in 1900, 191; in 1906, 202; in 1907, 190. This is, of course, for the registration area, which comprises about one-half of the population of the United States and 90 per cent. of all the population in cities over 8,000.

In spite of all that we have hoped to accomplish by scientific infant-feeding, the mortality records do not support the claim of great advance in the preservation of very young children. From a study of the institutions around New York Dr. Stowell shows that the most important factor in preserving the lives of children is breast-feeding. Children who are fed from the breast have four times the chance of life that orphans or foundlings have.

After this, the most important factor making against infant mortality is the training of mothers in the care for their children and the devotion of the mother to her child. An example of how much this latter factor means for the child is cited from the effect of our Civil War on infant mortality in England. During the war cotton was not shipped from this country to England in the usual quantities. As a result many factories in which mothers worked were closed and the latter had perforce to remain at home and care for their children. This caused a great falling off in infant mortality in the manufacturing cities, in which the death rate of infants is now ordinarily very high.

In France the "consultations des nourrissons," organized in the early nineties, have been found the most effective means of combating infant mortality. Poor mothers bring their babies to the infant consultations each week and are taught how to care for them. Thus the children's illnesses come under observation early. Breast-feeding has increased greatly since the consultations became general, and it has been found cheaper, as well as more effective, to give subsidies for breast-feeding than to furnish pure milk. Over sixty per cent. of the mothers were nursing their children in 1900, but in five years this percentage has increased to more than eighty-one.

The Huddersfield experiment is another instance of the good results of care of the children and encouragement to the mothers. In 1904 the mayor of Huddersfield, England, offered a prize of one pound for every child born during his mayoralty and produced alive and well at the town hall on the expiration of a year from date of birth. A visitor was sent out to note the condition of the children weekly in the meantime; and the infant mortality of Huddersfield for 1904-1905 was reduced from 134 to 54 in the thousand.

Of course the value of these two factors, mothers' milk and mothers' care, has long been recognized; and, by the way, it is rather interesting to observe that two centuries ago the same causes conspired against the welfare of the hapless children of fashionable mothers as to-day. Dr. Stowell quotes Dr. Harris, a physician to William and Mary in the early part of the eighteenth century, who wrote as follows: "It is grievously to be lamented that so many Mothers not only of the high Rank but even of the common Sort can with so much Inhumanity and mere Brutish cruelty desert their tender Offspring and expose them to so many Dangers of mercenary Nurses who are greedy only of the profuse Rewards bestowed on them at Christening and so being weary of their present Employment perform it negligently while they are looking out for a new Prey. Let us make a Survey of the Advantages that permit Mothers so commonly to sacrifice their beloved Offspring. They are the more free Enjoyment of Diversions, the greater Niceness of adorning their Persons, the opportunity of receiving impertinent visits and returning those insipid Favors, the more frequent Attendance on the Theatre or of spending the greater part of the Night at their beloved Cards." And this two full centuries ago! To-day, unfortunately, the family physician must sometimes share the blame for the fact that the child is early deprived of its best chance of life.

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[1] Med. Rec., May 22, 1909.

The question of reducing the death rate among infants, then, is much more a matter of hygiene and care for the children and proper instruction for the mothers than of rules and proportions of artificial food ingredients and special mixtures. Surely this lesson deserves to be emphasized; and therefore nothing can be more opportune than Dr. Ostheimer's article[1] in a recent issue of THE JOURNAL, urging that physicians use every effort to help the mother to nurse her child. As Dr. Gengenbach remarked, in discussing this article, "every day, every week, every month, that the child receives breast-milk, increases its resistance in the battle for existence which no other feeding method makes possible." To advise the premature weaning of the child without exhausting every means to improve the hygiene of the mother and the quantity and quality of the breast-milk is to become an accomplice of that "Inhumanity and mere Brutish cruelty" of which our colleague of the eighteenth century so justly complained.

COOK AND THE NORTH POLE

After centuries of vain striving, in which scores of expeditions have failed and hundreds of lives been lost, it is a remarkable coincidence that within one week the civilized world should have been electrified by news that the north pole had been discovered independently by two explorers, using different routes. The lure of the pole has never been wholly explainable by the hope of the discovery of valuable lands or scientific data of great practical importance, but there are very few persons who fail to appreciate the ambition of explorers. Men love to go where it is thought that human foot has never trod before, and it is human nature to view the inaccessible as a most important goal. As, little by little, most of the globe has been traversed, explored and added to the maps, the icy wastes of the North have called more and more loudly to be conquered. That the news of the discovery of the north pole came first from a physician gives the medical profession particular interest in this subject, which has filled the newspapers for days past.

DR. FREDERICK A. COOK
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[1] Aug. 14, 1909, p. 520.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 11, 1909

INFANT MORTALITY

Probably nothing is more fatal to real progress than a mistaken idea that such progress has already been accomplished. Such assumptions are too common. For instance, there is a very general impression that in the past twenty-five years we have greatly reduced the death rate among infants. Such statistics as are available, however, apparently indicate that whatever advance has been made in lessening infant mortality is due chiefly to the improvement in general living conditions. Dr. Stowell,[1] visiting physician to the New York City Children's Hospital and Schools, in a review of mortality tables for recent years, presents some facts that are rather startling, considering the usual impressions as to our great advance in the prophylaxis of infants' diseases.

The death rate of infants under one year per thousand living, as given by Dr. Stowell, shows very little change in the last thirty years in nearly all the civilized countries. In England, for instance, during the five years from 1876 to 1880, the death rate at this age was 145 per thousand. In the decade from 1893 to 1902 it was 152 per thousand living. In France the figures for the two corresponding periods are 163 and 158; in Prussia, 205 and 199; In Italy, 249 and 173; in Switzerland, 189 and 145, and in the United States, 166 and 165.4. The only country that shows a material reduction in the death rate at this age (and perhaps the last one from which it would be expected) is Italy. There is a good reduction in Switzerland, but that has been made in the last few years, as the death rate under one year in 1895 was higher than that in 1876. In the United States the census figures on this subject are very interesting. The deaths of infants under one year are calculated per thousand deaths in the United States. They run as follows: In 1860, 207; in 1870, 209; in 1880, 231; in 1890, 234; in 1900, 191; in 1906, 202; in 1907, 190. This is, of course, for the registration area, which comprises about one-half of the population of the United States and 90 per cent. of all the population in cities over 8,000.

In spite of all that we have hoped to accomplish by scientific infant-feeding, the mortality records do not support the claim of great advance in the preservation of very young children. From a study of the institutions around New York Dr. Stowell shows that the most important factor in preserving the lives of children is breast-feeding. Children who are fed from the breast have four times the chance of life that orphans or foundlings have.

After this, the most important factor making against infant mortality is the training of mothers in the care for their children and the devotion of the mother to her child. An example of how much this latter factor means for the child is cited from the effect of our Civil War on infant mortality in England. During the war cotton was not shipped from this country to England in the usual quantities. As a result many factories in which mothers worked were closed and the latter had perforce to remain at home and care for their children. This caused a great falling off in infant mortality in the manufacturing cities, in which the death rate of infants is now ordinarily very high.

In France the "consultations des nourrissons," organized in the early nineties, have been found the most effective means of combating infant mortality. Poor mothers bring their babies to the infant consultations each week and are taught how to care for them. Thus the children's illnesses come under observation early. Breast-feeding has increased greatly since the consultations became general, and it has been found cheaper, as well as more effective, to give subsidies for breast-feeding than to furnish pure milk. Over sixty per cent. of the mothers were nursing their children in 1900, but in five years this percentage has increased to more than eighty-one.

The Huddersfield experiment is another instance of the good results of care of the children and encouragement to the mothers. In 1904 the mayor of Huddersfield, England, offered a prize of one pound for every child born during his mayoralty and produced alive and well at the town hall on the expiration of a year from date of birth. A visitor was sent out to note the condition of the children weekly in the meantime; and the infant mortality of Huddersfield for 1904-1905 was reduced from 134 to 54 in the thousand.

Of course the value of these two factors, mothers' milk and mothers' care, has long been recognized; and, by the way, it is rather interesting to observe that two centuries ago the same causes conspired against the welfare of the hapless children of fashionable mothers as to-day. Dr. Stowell quotes Dr. Harris, a physician to William and Mary in the early part of the eighteenth century, who wrote as follows: "It is grievously to be lamented that so many Mothers not only of the high Rank but even of the common Sort can with so much Inhumanity and mere Brutish cruelty desert their tender Offspring and expose them to so many Dangers of mercenary Nurses who are greedy only of the profuse Rewards bestowed on them at Christening and so being weary of their present Employment perform it negligently while they are looking out for a new Prey. Let us make a Survey of the Advantages that permit Mothers so commonly to sacrifice their beloved Off-spring. They are the more free Enjoyment of Diversions, the greater Niceness of adorning their Persons, the opportunity of receiving impertinent visits and returning those insipid Favors, the more frequent Attendance on the Theatre or of spending the greater part of the Night at their beloved Cards." And this two full centuries ago! To-day, unfortunately, the family physician must sometimes share the blame for the fact that the child is early deprived of its best chance of life.

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[1] Med. Rec., May 22, 1909.

The question of reducing the death rate among infants, then, is much more a matter of hygiene and care for the children and proper instruction for the mothers than of rules and proportions of artificial food ingredients and special mixtures. Surely this lesson deserves to be emphasized; and therefore nothing can be more opportune than Dr. Ostheimer's article[1] in a recent issue of THE JOURNAL, urging that physicians use every effort to help the mother to nurse her child. As Dr. Gengenbach remarked, in discussing this article, "every day, every week, every month, that the child receives breast-milk, increases its resistance in the battle for existence which no other feeding method makes possible." To advise the premature weaning of the child without exhausting every means to improve the hygiene of the mother and the quantity and quality of the breast-milk is to become an accomplice of that "Inhumanity and mere Brutish cruelty" of which our colleague of the eighteenth century so justly complained.

COOK AND THE NORTH POLE

After centuries of vain striving, in which scores of expeditions have failed and hundreds of lives been lost, it is a remarkable coincidence that within one week the civilized world should have been electrified by news that the north pole had been discovered independently by two explorers, using different routes. The lure of the pole has never been wholly explainable by the hope of the discovery of valuable lands or scientific data of great practical importance, but there are very few persons who fail to appreciate the ambition of explorers. Men love to go where it is thought that human foot has never trod before, and it is human nature to view the inaccessible as a most important goal. As, little by little, most of the globe has been traversed, explored and added to the maps, the icy wastes of the North have called more and more loudly to be conquered. That the news of the discovery of the north pole came first from a physician gives the medical profession particular interest in this subject, which has filled the newspapers for days past.

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[1] Aug. 14, 1909, p. 520.

The medical profession is proud of Dr. Cook, thrilled by his invincible spirit for the conquest of a baffling goal and deeply appreciative of the honor which he has conferred on our calling. This spirit of attacking a difficult problem which has baffled many men is the spirit the medical profession loves to uphold as its ideal. With a far different method but often with the same feeling, the scientist searches for the cause of disease and for its cure. We congratulate Dr. Cook and wish him a speedy return to his native shores and to his wife and children who have so bravely and patiently borne his long absence.

THE LOCALIZATION OF CARCINOMA IN EARLY LIFE

Carcinoma in persons under thirty is uncommon enough to cause comment, and under twenty it is a rare curiosity, but there is no absolute limit below which carcinoma may not appear, as it has been observed even in the first few months of life. There seems to be a striking difference between different tissues in regard to the early appearance of carcinoma, as is brought out by Lindemann[1] in a compilation of the literature on this subject. Carcinoma of the skin seldom occurs in the young, scarcely 1 per cent. of some six hundred cases of cancer of the skin and lip being in individuals under thirty, and but about 2 per cent. of breast cancers under this age. In a large series of cases of carcinoma of the stomach, persons under thirty were the victims in from 2 to 3 per cent., and Riegel has recorded two cases of gastric carcinoma in the new-born, and one in an infant of six weeks. Esophageal cancer seems to be almost unknown before the thirtieth year, and extremely rare before forty; and the generative organs seldom become cancerous in youth, although there are reported cases of a carcinoma of the testicle in a child of one and one-half years, an ovarian carcinoma at nine months, and cancer of the uterus in an eight-year-old child. Three cases of carcinoma of the pancreas between the seventh month and the fourteenth year are also mentioned.

On the other hand certain organs show a relatively large proportion of the cancers which affect them occurring in early life, this being especially true of the kidney and lungs. More than one-third of the cases of renal cancer occur before the tenth year, 5 per cent. each in the second and third decennium, and 10 per cent. between thirty and forty; therefore, over half the cases of cancer of the kidney appear in the years when cancer seldom affects the more common sites of this disease. The lungs, a rare site of primary cancer at any age, show that a strikingly large proportion of such cancers develop in the young; thus of eighty-two cases twenty were in persons between 20 and 30, and in eighteen cases the age was between 30 and 40, so that over a third of these tumors appeared during the period of life when persons are supposed to be immune to carcinoma.

Another unusual site of primary carcinoma is the liver, and here, too, a relatively large proportion of the cases occur in the young, and there is at least one case of carcinoma of the liver in the new-born. Carcinoma of the intestines appears rather frequently in the young, it having been estimated that of all the cases of primary intestinal carcinoma one-sixth manifest themselves before the thirtieth year, and one-seventh between the thirtieth and fortieth years, while no fewer than twenty-three authentic cases before the twentieth year were collected from the literature by Lindemann. No explanation is advanced for this peculiar tendency of tissues which seldom become cancerous at any age, to develop cancers particularly in the young.

CULTIVATION OF THE SPIROCHÆTA PALLIDA

Since Schaudinn several years ago discovered the *Spirochæta pallida,* many attempts have been made to grow the organism on artificial media, but only recently has any degree of success been obtained. Schereschewsky[1] observed multiplication of the spirochete in pure horse serum. This medium heated to 58 or 60° C. for an hour or more becomes gelatinous, though it remains perfectly clear. Material obtained from a syphilitic papule or condyloma is immersed in this fluid and placed under strict anaërobic conditions in the incubator. After a number of days the culture is examined and by both the staining method and dark-ground illumination a notable increase in the number of organisms is seen. He recommends the dark-ground illuminator as very satisfactory and easily recognizes the *Spirochæta pallida* by this method. In a more recent paper[2] he gives the results of more extensive studies. In the first culture shortly after inoculation he noted a large number of the refringens type, but in subcultures and in the old original cultures the pallida form prevails.

In Schereschewsky's cultures the syphilitic organisms occurred in mixed culture with other bacteria. Mühlens[3] announces, however, that he has obtained pure cultures of the *Spirochæta pallida* from a syphilitic gland. He used the method employed by him several years ago[4] in obtaining pure cultures of *Spirochæta dentium.* A tube of horse-serum agar (1:3) is inoculated with the syphilitic material and under strict anaërobic conditions after several days very tiny colonies develop on the agar

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[1] Ztschr. f. Krebsforsch., 1909, vi, 682.

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[1] Deutsch. med. Wchnschr., 1909, xxxv, 835.
[2] Deutsch. med. Wchnschr., 1909, xxxv, 1260.
[3] Deutsch. med. Wchnschr., 1909, xxxv, 1261.
[4] Ztschr. f. Hyg., 1906, lv, 81.

which, by breaking the tube, can be isolated and examined. In the fourth generation he obtained pure cultures and morphologically in living and stained specimens they were identical with the original.

Animal experiments using pure cultures are now being carried on by Mühlens, the results of which will soon be reported. Schereschewsky reports negative results thus far on animals. Successful animal inoculations with subsequent recovery of the organism are highly essential and necessary to complete the chain of evidence in establishing the etiologic relation of the spirochete to the disease. Koch's requisites will then be fulfilled as regards syphilis.

Pure cultures of the spirochete will be of great importance in the further study of the disease, opening up new fields especially along the line of immunology and serotherapy. It will place the etiology and pathology on a substantial basis and afford more rational methods for studying and combating the disease.

POSSIBILITIES OF MODERN PREVENTIVE MEDICINE

It has been asserted that if the knowledge of the transmission of disease which we already possess could be fully utilized it would be possible—without the discovery of a single new fact—to increase materially the average span of human life and immeasurably to diminish human distress. Sanitarians have often longed for an opportunity to prove the truth of this in a community where the necessary authority and facilities could be provided and thus to show what modern preventive medicine is capable of accomplishing. It seems that in the Island of Guam many of the conditions of such a medical Utopia can be found.

This island, which is solely a naval station, has a native population of 11,636 and a foreign population of 398, about one-half of which is made up of the naval forces. The government is a sort of beneficent autocracy entirely in the hands of naval officers, and all affairs relating to health and sanitation are administered by naval medical officers. There are no other physicians in the colony, and so these officers are charged with the care of the sick. Hospital accommodations are ample and, by means of dressing stations and clinics, relief is extended in all parts of the island. There is provision in segregated colonies for all cases of leprosy and gangosa and a small separate hospital for other communicable diseases. A medical officer detailed as pathologist of the station is engaged in investigating the nature and causes of the diseases peculiar to Guam. Such a rare centralization of medical research, sanitary administration and the care of all classes of the sick makes conditions almost ideal for a practical demonstration in preventive medicine. The fact that more than three-fourths of the native population of the island is concentrated in a large town where overcrowding is extreme and that Guam is afflicted with the usual endemic diseases and with general worm infection simply makes the results of the experiment of so much more interest and value.

In the July issue of the *U. S. Naval Medical Bulletin* one may read what has been accomplished in the short period of American occupation. The reports of the medical officers for 1907 and 1908 are full of interest and should be read in detail by all those interested in tropical sanitation, but the results of the splendid work which has been done are sufficiently well shown by the death rate of 24.3 per 1,000. Some idea of what such a rate means in the tropics may be gained from comparison with the mortality in tropical cities which have long been under the control of European governments, and from the fact that Guam's death rate is exceeded in not a few cities in the United States. Twenty per cent. of the deaths in Guam are caused by guha, an epidemic respiratory disease peculiar to the Ladrone and Caroline Islands. The death rate from all other causes was 19.9. In many countries in Europe such a rate as this would be considered remarkably low at the present time, and there are many communities in the most favored parts of this country which have not yet been able to attain it. The results achieved in the Canal Zone have set a standard for tropical sanitation, but the presence there of a large temporary population within an age period having normally a very low death rate renders comparison with other tropical communities less significant than in the case of Guam.

In Guam it is planned to replace the water supply by means of wells with one from an uncontaminated source and to extend the sewer system. With such means of controlling infection from intestinal parasites it is likely that the vital statistics of this insignificant Pacific isle will assume an importance little dreamed of by those who undertook its sanitation as part of the day's work.

It is a strange commentary on our progress in matters relating to the public health that we must go to the edges of the civilized world for examples of what can be done in the control of disease, but if the true lesson of the splendid victories which have been won in Guam, the Canal Zone and our other tropical possessions is ever fully grasped by those who make and administer the laws in our own country the end of the present sacrifice of human lives from preventable causes will be in sight.

Medical News

CALIFORNIA

Railway Surgeons Meet.—The seventh annual meeting of the Pacific Association of Railway Surgeons was held in San Francisco August 27 and 28, and the following officers were elected: President, Dr. Carl Kurtz, Los Angeles; vice-presidents, Drs. Oliver D. Hamlin, Oakland, and Thomas B. Reardan, Oroville; secretary, Dr. George R. Carson, San Francisco; treasurer, Dr. Ernest M. Keys, Alameda, and member of executive board, Dr. David Powell, Marysville.

Hospitals and Sanatoria.—The Sanatorium of the White Crusaders, Sacramento, for the treatment of patients in the first stages of tuberculosis, was dedicated at Alta August 16. The institution will accommodate thirty patients, and Dr. John

Howard will be resident physician.——Articles of incorporation have been filed by the San Jose General Hospital with capitalization of $25,000.——The Peninsula Hospital, Palo Alto, has leased from Stanford University, the Guild Hospital building for the temporary care of patients, pending the completion of the new Peninsula Hospital.——The hospital at the Odd Fellows' Home, Thermalito, was formally dedicated August 14.——The Fowler Memorial Building at the Pasadena Hospital was dedicated August 25.

COLORADO

Fraternal Sanatorium.—The tuberculosis sanatorium of the Modern Woodmen of America has been formally turned over to the trustees. The site consists of a tract of 1943 acres with a central hospital and a number of cottages.

Personal.—Dr. Thomas D. Palmer, Canon City, has been appointed state penitentiary physician, vice Dr. Frank N. Carrier.——Dr. Charles A. Ellis, Denver, has been appointed official physician to the Trans-Mississippi Congress.——Dr. George H. Stover, Denver, who underwent operation for the removal of thirty cancers on his hand, due it is said, to exposure to the *x*-ray, has recovered and returned to Denver.——Dr. William Booth, Canon City, has been appointed physician of Fremont county.——Dr. Conway B. Ackley was appointed police surgeon of Denver, August 27.

GEORGIA

Fined for Contempt.—In the mayor's court of Athens, August 27, a fine of $100 is said to have been imposed on Dr. W. T. Hamilton for contempt of court, at his failure to appear as a witness after having been summoned.

Osteopathy May Be Legalized.—The House of Representatives, on August 10, passed the Longley Senate Bill, legally recognizing osteopathy in the state, establishing a state board of osteopathic examiners, regulating the practice of osteopathy, and providing that each duly recognized osteopath shall pay a license fee of $10. The bill passed by a vote of 112 to 33. Medical men all over the state have telegraphed and written urging the governor not to approve the bill.

Medical Officers in Camp.—The following medical officers of the Georgia National Guard attended the camp of instruction of medical officers at Antietam, Md.: Major William C. Lyle, Augusta; Major John W. Duncan, Atlanta; Major Clarence H. Willis, Barnesville; Capt. Benjamin E. Pearce, Atlanta; Capt. Martin Cooley, Savannah; Capt. Thomas E. White, Fitzgerald; Capt. Samuel H. Green, Atlanta; Capt. Joseph G. Jarrell, Savannah; Capt. William D. Travis, Covington; First Lieut. Henry P. Adams, Savannah; First Lieut. Henry W. Copeland, Jackson; First Lieut. Robert G. Stephens, and First Lieut. Arnold H. Lindorme, Atlanta.

Free Treatment for Children.—Dr. Stewart R. Roberts, director of medical inspection of the Atlanta public schools, announces that free treatment for diseases of the eye, ear, nose and throat for poor children will be given at Grady Hospital every Friday from two to four by Drs. F. Phinizy Calhoun, Robert B. Ridley, Jr., and Alexander W. Stirling; at the Atlanta College of Physicians and Surgeons on Thursday from 2 to 3:30, by Dr. Abner W. Calhoun, and on Tuesday at 3, by Dr. Dunbar Roy; and at the Atlanta School of Medicine by Dr. J. M. Crawford every Thursday from 1 to 3, and by Dr. Robert B. Ridley, Jr., every Tuesday from 3 to 4.

State Sanatorium Located.—A tract of 257 acres has been purchased for $2,500 near Alto, Habersham county, by the executive committee of the board of trustees for the State Tuberculosis Sanatorium, on which the new sanatorium will be located. The state appropriated $25,000 for the sanatorium, of which $13,000 is available this year. It is proposed to erect an executive building and individual cottages. At the meeting of the trustees in Atlanta August 17, the purchase was confirmed. The members of the executive committee are Capt. W. G. Raoul, Atlanta, T. D. Tinsley, Macon, Dr. Charles H. Richardson, Montezuma, Dr. Marcus F. Carson, Griffin, and Dr. Henry R. Slack, La Grange.

Society Meetings.—The Eighth District Medical Society held its annual meeting in Madison, August 18, and elected the following officers: Dr. Joshua H. Gheesling, Greensboro, president; Dr. Robert W. Trotter, Madison, vice-president; and Dr. Dupree, Athens, secretary-treasurer. The Morgan County Medical Society entertained the society at a barbecue. The next meeting is to be held in Monticello.——At the annual meeting of Troup County Medical Society, held in La Grange, August 26, the following officers were elected: President, Dr. Henry W. Terrell, La Grange; vice-president, Dr. John M. Poer, West Point; secretary-treasurer, Dr. William R. McCall, La Grange; and censors, Drs. Robert H. Jenkins, Hogansville, and Joseph E. Lane

Personal.—Dr. Mark H. Blandford has been elected city physician of Columbus, vice Dr. Charles N. Howard, resigned.——Dr. S. C. Wilson, Augusta, has been elected secretary of the board of health, vice Dr. Edward C. Goodrich, deceased.——Dr. Cyrus W. Strickler has resigned from the board of health of Atlanta.——Dr. James B. Wright, for seven years major and surgeon of the Second Georgia Infantry, has resigned.——Dr. Henry F. Harris, Atlanta, secretary of the State Board of Health, and in charge of the state laboratory, who was operated on for mastoiditis in June, is convalescent.

ILLINOIS

Peoria to Have Tent Colony.—It is planned to have a tent colony in operation in old Prospect Park, Peoria, by the first of next month. The institution is expected to be self-sustaining after the first six months.

Personal.—Dr. Louis J. Linder, East St. Louis, sails for Europe September 11.——Dr. William S. Howell, Winnebago, has been appointed local surgeon for the Northwestern system.——Dr. William C. Day, Whitehall, is reported to be convalescent.——Dr. William G. Caron, Aurora, has been elected supreme treasurer of the Knights of North America.

Hospital Notes.—By the will of the late Judge Solomon H. Bethea, $150,000 is bequeathed to the Dixon Public Hospital, conditionally on the name of the institution being changed to the Katherine Shaw Bethea Hospital.——The new addition to St. Anthony's Hospital, Rockford, was formally dedicated with impressive ceremonies, August 29, by Bishop Muldoon.

Chicago

Personal.—Dr. Frank Billings has returned from Europe.——Dr. William Rittenhouse, who was injured recently in a street car accident, has recovered and resumed practice.

Tuberculosis Camp Closed.—The school for tuberculous children which has been maintained by the board of education and the Chicago Tuberculosis Institute at Seventy-fifth street and Vincennes road for the last five weeks, closed September 2.

Bacteriologist Dismissed.—The civil service commission on September 3 sustained the charges of Health Commissioner Evans against Dr. Joseph F. Biehn and ordered that he "be removed from his office as superintendent of the laboratory of the department of health and from the service of the City of Chicago."

MARYLAND

Pellagra.—Several cases of pellagra have been reported in Charles county, and the secretary of the State Board of Health has gone to investigate the conditions.

Semi-Annual State Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Braddock Heights, September 15-17.

Personal.—Dr. Charles A. Wells, Hyattsville, is reported to be seriously ill with disease of the bladder.——Dr. Clarence Nichols, Hudson, left September 3 for a trip of six weeks through Canada and the Pacific Northwest.

Hospital Needed.—The physicians of Queen Anne county are endeavoring to secure a hospital at Centerville. A board of fifteen directors has been appointed. Dr. Laura Ewing Reading, Hayden, has been designated to devise ways and means of carrying out the project.

Baltimore

Anatomists Resign.—Drs. Robert Retzer and Henry McE. McKnower, associates in anatomy in Johns Hopkins Medical School, have resigned to accept similar appointments at the universities of Minnesota and Toronto, respectively.

Hospitals to Have Fire Alarm Boxes.—The fire board has determined to install fire alarm boxes in all hospitals and similar institutions harboring helpless persons. Considerable delay is occasioned in sending in alarms from these institutions by way of the street fire alarm boxes.

Personal.—Dr. Harvey W. Cushing of Johns Hopkins University, gave the William Banks Memorial Lecture at the University of Liverpool, August 4, on "The Pathology and Surgery of Intracranial Tumor."——Dr. Owen Williams, Liverpool, a member of the staff of the Royal Infirmary, has been sent to study methods in use in Johns Hopkins Hospital.——Dr. A. Duval Atkinson has resigned the clinical professorship of medicine in the University of Maryland.——Dr. Walter Van Swearingen Levy has asked the authorities to be allowed to change his surname to Van Swearingen.

MASSACHUSETTS

Personal.—Dr. John A. Barry, Charlestown, was assaulted and severely beaten August 26.——Dr. W. J. Dodd, Boston, has sailed for Europe.

Lodging House Regulations.—The new rules governing lodging houses of Boston apply to the class of houses where the charge for lodging does not exceed twenty-five cents per night. The new rules provide that records shall be kept, that individual towels shall be furnished, and that no spitting on the floors shall be allowed.

To Reduce Infant Mortality.—The sanitary milk committee of Lawrence is cooperating with the physicians of the city in the endeavor to reduce infant mortality, and has undertaken the modifying of milk under the instructions of the attending physicians. Blank formula cards have been issued, to be filled out by the person ordering the milk.

Hospital News.—The state has taken by right of eminent domain all the land lying between Morton, Canterbury, Walkby and Harvard streets, Dorchester. This is the first step in the erection of a great metropolitan district hospital for the insane.——The Babies' Hospital Corporation, Salem, has purchased the old Ropes' Mansion with about nine acres of land, and will use it for a hospital for children.——The Edward Deery home, Ware, has been purchased by the Boston Nurse and Hospital Association, and will be remodeled at once and opened as a hospital.

Ether Day Exercises.—Invitations have been issued by the trustees of the Massachusetts General Hospital to attend the exercises of the sixty-third anniversary of Ether Day, October 16. In the morning demonstrations will be made and operations performed at the hospital, where luncheon will be served at 1 o'clock. The Ether Day exercises proper will take place at 2:30, when diplomas will be presented and an address will be delivered by Charles W. Eliot, LL.D. (M.D., Hon.), and at 7 o'clock the dinner of the Hospital Alumni Association will occur.

MINNESOTA

Personal.—Dr. Hannibal H. Kimball, Minneapolis, sailed for Europe August 18.——Dr. Thomas N. McLean has been appointed local surgeon of the Northern Pacific Railway at Fergus Falls, vice Dr. William T. Duncan, deceased.——Dr. Albert C. Wedge, Albert Lea, has resigned from the state forestry board.

Hospital Notes.—The Von Hagen mansion, Sleepy Eye, has been rented by Dr. G. Schmidt, who will equip the building as a hospital.——The commissioners of St. Louis county have appropriated $20,000 for the construction and maintenance of a tuberculosis sanatorium for the county. The commission appointed to supervise the erection of the sanatorium consists of Mr. George Gray and Dr. Edward L. Tuohy, Duluth, and Mayor Walter J. Smith, Eveleth.

NEW JERSEY

New Quarantine Boat.—The tug boat *Allen*, which has been used for fifteen years for the State Department of Health at Quarantine, has been superseded by the steamer *James Heyer*, a new and modern vessel, and much better adapted to the purpose required.

August Mortality.—There were reported 3,255 deaths in the state, or 46 more than for the corresponding month of 1908. Among the principal causes of death were infantile diarrhea, 656, or 242 more than for the average for the previous twelve months; diseases of the nervous system, 355; tuberculosis, 325; diseases of the circulatory system, 271; diseases of the digestive system, 248; nephritis, 179; cancer, 164; pneumonia, 114; whooping cough, 31; typhoid fever, 29; scarlet fever, 25; diphtheria, 21; and measles, 11.

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PENNSYLVANIA

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Howard will be resident physician.——Articles of incorporation have been filed by the San Jose General Hospital with capitalization of $25,000.——The Peninsula Hospital, Palo Alto, has leased from Stanford University, the Guild Hospital building for the temporary care of patients, pending the completion of the new Peninsula Hospital.——The hospital at the Odd Fellows' Home, Thermalito, was formally dedicated August 14. ——The Fowler Memorial Building at the Pasadena Hospital was dedicated August 25.

COLORADO

Fraternal Sanatorium.—The tuberculosis sanatorium of the Modern Woodmen of America has been formally turned over to the trustees. The site consists of a tract of 1943 acres with a central hospital and a number of cottages.

Personal.—Dr. Thomas D. Palmer, Canon City, has been appointed state penitentiary physician, vice Dr. Frank N. Carrier. ——Dr. Charles A. Ellis, Denver, has been appointed official physician to the Trans-Mississippi Congress.——Dr. George H. Stover, Denver, who underwent operation for the removal of thirty cancers on his hand, due it is said, to exposure to the *x*-ray, has recovered and returned to Denver.——Dr. William Booth, Canon City, has been appointed physician of Fremont county.——Dr. Conway B. Ackley was appointed police surgeon of Denver, August 27.

GEORGIA

Fined for Contempt.—In the mayor's court of Athens, August 27, a fine of $100 is said to have been imposed on Dr. W. T. Hamilton for contempt of court, at his failure to appear as a witness after having been summoned.

Osteopathy May Be Legalized.—The House of Representatives, on August 10, passed the Longley Senate Bill, legally recognizing osteopathy in the state, establishing a state board of osteopathic examiners, regulating the practice of osteopathy, and providing that each duly recognized osteopath shall pay a license fee of $10. The bill passed by a vote of 112 to 33. Medical men all over the state have telegraphed and written urging the governor not to approve the bill.

Medical Officers in Camp.—[illegible] officers of the Georgia National Guard [illegible] instruction of medical officers at Antieta [illegible] C. Lyle, Augusta; Major John W. Duncan, Atlanta; Major Clarence H. Willis, Barnesville; Capt. Benjamin E. Pearce, Atlanta; Capt. Martin Cooley, Savannah; Capt. Thomas E. White, Fitzgerald; Capt. Samuel H. Green, Atlanta; Capt. Joseph G. Jarrell, Savannah; Capt. William D. Travis, Covington; First Lieut. Henry P. Adams, Savannah; First Lieut. Henry W. Copeland, Jackson; First Lieut. Robert G. Stephens, and First Lieut. Arnold H. Lindorme, Atlanta.

Free Treatment for Children.—Dr. Stewart R. Roberts, director of medical inspection of the Atlanta public schools, announces that free treatment for diseases of the eye, ear, nose and throat for poor children will be given at Grady Hospital every Friday from two to four by Drs. F. Phinizy Calhoun, Robert B. Ridley, Jr., and Alexander W. Stirling; at the Atlanta College of Physicians and Surgeons on Thursday from 2 to 3:30, by Dr. Abner W. Calhoun, and on Tuesday at 3, by Dr. Dunbar Roy; and at the Atlanta School of Medicine by Dr. J. M. Crawford every Thursday from 1 to 3, and by Dr. Robert B. Ridley, Jr., every Tuesday from 3 to 4.

State Sanatorium Located.—A tract of 257 acres has been purchased for $2,500 near Alto, Habersham county, by the executive committee of the board of trustees for the State Tuberculosis Sanatorium, on which the new sanatorium will be located. The state appropriated $25,000 for the sanatorium, of which $13,000 is available this year. It is proposed to erect an executive building and individual cottages. At the meeting of the trustees in Atlanta August 17, the purchase was confirmed. The members of the executive committee are Capt. W. G. Raoul, Atlanta, T. D. Tinsley, Macon, Dr. Charles H. Richardson, Montezuma, Dr. Marcus F. Carson, Griffin, and Dr. Henry R. Slack, La Grange.

Society Meetings.—The Eighth District Medical Society held its annual meeting in Madison, August 18, and elected the following officers: Dr. Joshua H. Gheesling, Greensboro, president; Dr. Robert W. Trotter, Madison, vice-president; and Dr. Dupree, Athens, secretary-treasurer. The Morgan County Medical Society entertained the society at a barbecue. The next meeting is to be held in Monticello.——At the annual meeting of Troup County Medical Society, held in La Grange, August 26, the following officers were elected: President, Dr. Henry W. Terrell, La Grange; vice-president, Dr. John M. Poer, West Point; secretary-treasurer, Dr. William R. McCall, La Grange; and censors, Drs. Robert H. Jenkins, Hogansville, and Joseph E. Lane

Personal.—Dr. Mark H. Blandford has been elected city physician of Columbus, vice Dr. Charles N. Howard, resigned. ——Dr. S. C. Wilson, Augusta, has been elected secretary of the board of health, vice Dr. Edward C. Goodrich, deceased. ——Dr. Cyrus W. Strickler has resigned from the board of health of Atlanta.——Dr. James B. Wright, for seven years major and surgeon of the Second Georgia Infantry, has resigned.——Dr. Henry F. Harris, Atlanta, secretary of the State Board of Health, and in charge of the state laboratory, who was operated on for mastoiditis in June, is convalescent.

ILLINOIS

Peoria to Have Tent Colony.—It is planned to have a tent colony in operation in old Prospect Park, Peoria, by the first of next month. The institution is expected to be self-sustaining after the first six months.

Personal.—Dr. Louis J. Linder, East St. Louis, sails for Europe September 11.——Dr. William S. Howell, Winnebago, has been appointed local surgeon for the Northwestern system. ——Dr. William C. Day, Whitehall, is reported to be convalescent.——Dr. William G. Caron, Aurora, has been elected supreme treasurer of the Knights of North America.

Hospital Notes.—By the will of the late Judge Solomon H. Bethea, $150,000 is bequeathed to the Dixon Public Hospital, conditionally on the name of the institution being changed to the Katherine Shaw Bethea Hospital.——The new addition to St. Anthony's Hospital, Rockford, was formally dedicated with impressive ceremonies, August 29, by Bishop Muldoon.

Chicago

Personal.—Dr. Frank Billings has returned from Europe. ——Dr. William Rittenhouse, who was injured recently in a street car accident, has recovered and resumed practice.

Tuberculosis Camp Closed.—The school for tuberculous children which has been maintained by the board of education and the Chicago Tuberculosis Institute at Seventy-fifth street and Vincennes road for the last five weeks, closed September 2.

Bacteriologist Dismissed.—The civil service commission on September 3 sustained the charges of Health Commissioner Evans against Dr. Joseph F. Biehn and ordered that he "be removed from his office as superintendent of the laboratory of the department of health and from the service of the City of Chicago."

MARYLAND

Pellagra.—Several cases of pellagra have been reported in Charles county, and the secretary of the State Board of Health has gone to investigate the conditions.

Semi-Annual State Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland will be held at Braddock Heights, September 15-17.

Personal.—Dr. Charles A. Wells, Hyattsville, is reported to be seriously ill with disease of the bladder.——Dr. Clarence Nichols, Hudson, left September 3 for a trip of six weeks through Canada and the Pacific Northwest.

Hospital Needed.—The physicians of Queen Anne county are endeavoring to secure a hospital at Centerville. A board of fifteen directors has been appointed. Dr. Laura Ewing Reading, Hayden, has been designated to devise ways and means of carrying out the project.

Baltimore

Anatomists Resign.—Drs. Robert Retzer and Henry McE. McKnower, associates in anatomy in Johns Hopkins Medical School, have resigned to accept similar appointments at the universities of Minnesota and Toronto, respectively.

Hospitals to Have Fire Alarm Boxes.—The fire board has determined to install fire alarm boxes in all hospitals and similar institutions harboring helpless persons. Considerable delay is occasioned in sending in alarms from these institutions by way of the street fire alarm boxes.

Personal.—Dr. Harvey W. Cushing of Johns Hopkins University, gave the William Banks Memorial Lecture at the University of Liverpool, August 4, on "The Pathology and Surgery of Intracranial Tumor."——Dr. Owen Williams, Liverpool, a member of the staff of the Royal Infirmary, has been sent to study methods in use in Johns Hopkins Hospital.——Dr. A. Duval Atkinson has resigned the clinical professorship of medicine in the University of Maryland.——Dr. Walter Van Swearingen Levy has asked the authorities to be allowed to change his surname to Van Swearingen.

MASSACHUSETTS

Personal.—Dr. John A. Barry, Charlestown, was assaulted and severely beaten August 26.——Dr. W. J. Dodd, Boston, has sailed for Europe.

Lodging House Regulations.—The new rules governing lodging houses of Boston apply to the class of houses where the charge for lodging does not exceed twenty-five cents per night. The new rules provide that records shall be kept, that individual towels shall be furnished, and that no spitting on the floors shall be allowed.

To Reduce Infant Mortality.—The sanitary milk committee of Lawrence is cooperating with the physicians of the city in the endeavor to reduce infant mortality, and has undertaken the modifying of milk under the instructions of the attending physicians. Blank formula cards have been issued, to be filled out by the person ordering the milk.

Hospital News.—The state has taken by right of eminent domain all the land lying between Morton, Canterbury, Walkby and Harvard streets, Dorchester. This is the first step in the erection of a great metropolitan district hospital for the insane.——The Babies' Hospital Corporation, Salem, has purchased the old Ropes' Mansion with about nine acres of land, and will use it for a hospital for children.——The Edward Deery home, Ware, has been purchased by the Boston Nurse and Hospital Association, and will be remodeled at once and opened as a hospital.

Ether Day Exercises.—Invitations have been issued by the trustees of the Massachusetts General Hospital to attend the exercises of the sixty-third anniversary of Ether Day, October 16. In the morning demonstrations will be made and operations performed at the hospital, where luncheon will be served at 1 o'clock. The Ether Day exercises proper will take place at 2:30, when diplomas will be presented and an address will be delivered by Charles W. Eliot, LL.D. (M.D., Hon.), and at 7 o'clock the dinner of the Hospital Alumni Association will occur.

MINNESOTA

Personal.—Dr. Hannibal H. Kimball, Minneapolis, sailed for Europe August 18.——Dr. Thomas N. McLean has been appointed local surgeon of the Northern Pacific Railway at Fergus Falls, vice Dr. William T. Duncan, deceased.——Dr. Albert C. Wedge, Albert Lea, has resigned from the state forestry board.

Hospital Notes.—The Von Hagen mansion, Sleepy Eye, has been rented by Dr. G. Schmidt, who will equip the building as a hospital.——The commissioners of St. Louis county have appropriated $20,000 for the construction and maintenance of a tuberculosis sanatorium for the county. The commission appointed to supervise the erection of the sanatorium consists of Mr. George Gray and Dr. Edward L. Tuohy, Duluth, and Mayor Walter J. Smith, Eveleth.

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Society Meetings.—The fourth annual meeting of the Fifth Councilor District Medical Society was held in Gettysburg, August 10. The following officers were elected: President, Dr. Walter H. O'Neal, Gettysburg; vice-president, Dr. William E. Wolff, Arendtsville; and secretary-treasurer, Dr. George E. Holtzapple, York. Hanover was selected as the next place of meeting.——Dauphin County Medical Society, at Harrisburg, August 17, recommended the expulsion from the society of all physicians doing lodge or contract practice, and of members meeting and consulting with physicians engaged in lodge or contract practice.——At the sixth annual meeting of the Northwestern Medical Society, composed of members of the medical societies of Warren, Erie, Mercer, Crawford, McKeown and Venango counties, held in Cambridge Springs, August 25, vaccine therapy was the principal subject of discussion. The officers of the previous year were re-elected.

Philadelphia

Milk Dealers Must Be Licensed.—Under the rules drafted by Director Neff of the Bureau of Health, and approved by the state and national authorities, and by the milk exchange, all milk dealers will be required to take out a license issued by the Department of Health. Fresh milk must contain 12 per cent. of milk solids, including 3 per cent. of butter fat; cream must contain 15 per cent. of butter fat, and skim milk 8½ per cent. of milk solids, exclusive of butter fat. Except in the case of modified milk, the addition of ice will be classed as adulteration.

Work Against Tuberculosis.—The Metal Polishers and Buffers International Union has decided to tax its members to found a house for members ill with tuberculosis. The average life of metal polishers is thirty-four years, or six years less than that of ordinary individuals.——The Independent Order of the Sons of Jacob has pledged financial support for the maintenance of a dispensary to be called the Jewish Consumptive Institution, and to work in conjunction with the Philadelphia Jewish Consumptive Sanatorium, Eaglesville. The dispensary is to care for all cases of tuberculosis which cannot be treated in sanatoria.

[illegible]—Dr. John B. Stetson has been provisionally ap[illegible] third assistant bacteriologist of the bureau of health, [illegible]r. Mortimer Herzberg, resigned.——Dr. Joseph P. Walsh [illegible] been appointed consulting physician to the department of tuberculosis in the Philadelphia General Hospital, vice Dr. Lawrence F. Flick, resigned.——Dr. James T. Schell, chief surgeon of the Northwestern General Hospital, had his automobile demolished in a collision with a trolley car, but luckily escaped without injury.——Dr. Allen J. Smith has been appointed dean of the Medical Department of the University of Pennsylvania, vice Dr. Charles H. Frazer, resigned.

VIRGINIA

Physicians Liable to Arrest.—By alleged disregard of the postal regulations prescribing how bacteriologic specimens may be sent through the mails, a number of physicians of the state have been threatened with arrest by the postal authorities.

Building for Physicians.—A building is contemplated in Richmond to be occupied exclusively by physicians and dentists. A lot has been selected in the central part of the city, and the Academy of Medicine has already agreed to rent rooms in the building if erected.

Personal.—Dr. May Farinholt Jones, assistant resident physician at the State Hospital for the Insane, Williamsburg, has resigned.——Dr. Thomas J. Pretlow has been elected health officer of Newport News.——Dr. William D. Tewksbury has been appointed superintendent of the Virginia State Tuberculosis Sanatorium, Katawba.

GENERAL NEWS AND COMMENT

New Hawaiian Hospital.—The Maui, Hawaii, Agricultural Company has erected a hospital at Paia for the accommodation of its employés, at a cost of about $15,000. The hospital is 147x108 feet, two stories in height, and equipped with all modern appliances.

Clinical Research.—A circular letter has been issued signed by Dr. James Krauss, Boston, calling a meeting at John Ware Hall, Boston Medical Library, October 27, at 10 a. m., which has for its objects the establishment of an American Association of Clinical Research; the establishment of clinical research on an incontrovertible scientific basis in hospitals, and the institution of an American Journal of Clinical Research, in which the work of the members of the association and others doing clinical research work in a scientific manner shall be published.

Interstate Club Organized.—The Interstate Medical Club has been organized with a membership composed of physicians living in Breckenridge, Minn., Wahpeton, N. D., and surrounding towns in Minnesota and North Dakota. The following officers have been elected: President, Dr. Timothy O'Brien, Wahpeton, N. D.; vice-president, Dr. Nathan F. Doleman, Tintah, Minn.; secretary, Dr. C. P. Rice, Breckenridge, Minn.; treasurer, Dr. Louis W. Armstrong, Breckenridge, Minn., and censors, Drs. Tobias L. Birberg, Campbell, Minn., A. Victor Young, Hankinson, N. D., and Robert H. Devine, Wahpeton, N. D.

Officers Elected.—At the annual meeting of the Medical Section of the National Fraternal Congress, held in Boston, August 17, the following officers were elected: President, Dr. Wallace K. Harrison, Chicago; vice-presidents, Drs. Isabella M. Holdon, Port Huron, Mich., and Elmore S. Pettyjohn, Topeka, Kan.; secretary, Dr. John G. McConnell, Chicago; and treasurer, Dr. Elizabeth M. Hooper, Port Huron, Mich.——At the International Congress on Psychology, held in Geneva, August 6, the invitation to hold the next congress in Boston in 1913 was accepted. Prof. William James, Cambridge, Mass., was elected honorary president; Prof. James M. Baldwin, Baltimore, president; and Drs. Edward B. Titchener and James McK. Cattell, New York City, vice-presidents.

Congress of Colored Physicians.—At the eleventh annual meeting of the National Medical Association, held in Boston, August 24-26, under the presidency of Dr. Peter A. Johnson, New York City, the oration on medicine was delivered by Dr. Joseph J. France, Portsmouth, Va., on "The Treatment of Lobar Pneumonia." The following officers were elected: President, Dr. Marcus F. Wheatland, Newport, R. I.; vice-president, W. F. Lofton, D.D.S., Washington, D. C.; secretary, Dr. John A. Kenney, Tuskegee, Ala.; treasurer, Dr. A. Wilberforce Williams, Chicago, and executive board, Drs. Nathan F. Mossell, Philadelphia; Robert F. Boyd, Nashville, Tenn.; George C. Hall, Chicago; Albert R. Collins, Washington, D. C.; Mahlon A. Van Horn, Newport, R. I.; Charles H. Shepherd, Durham, N. C.; Amanda V. Gray, Washington, D. C.; G. E. Cannon, Jersey City, N. J., and Willis W. Steers, Decatur, Ala. It was voted to hold the next meeting in Washington, D. C.

Antituberculosis Work Among Negroes.—Surgeon Charles P. Wertenbaker, P. H. and M.-H. Service, has suggested a plan for the organization of an antituberculosis league for negroes. The plan is that the vice-president of each county society call together the leading negro ministers, physicians, teachers, etc., and induce them to start a branch of the league in each negro church in the county. Any colored person may become a member of the branch league by payment of the annual dues, and will receive a certificate of membership and be furnished a button bearing the words, "Colored Antituberculosis League," which surrounds a double red cross. The fund from the annual dues is to be used for the care and treatment of society members of that league as may have tuberculosis, and for dissemination of information by publication and lectures, and the establishment of dispensaries, sanatoria, etc. The state league of Georgia has already completed its organization and a number of branch church leagues have already been formed.

CANADA

Canadian Medical Association.—The forty-second annual meeting of the Canadian Medical Association, held in Winnipeg, Man., August 23 to 25, was in many respects the best meeting in the history of the organization. The attendance was the largest in its history, as 338 registered, and this, in view of the fact that the annual fee had been raised from $2.00 to $5.00, speaks well for the enthusiasm pervading the organization. Perhaps the desire to see established an official medical journal for the association may account for this. The executive council placed this matter in the hands of the finance committee, of which Dr. John T. Fotheringham, Toronto, formerly editor of the *Canada Lancet*, is chairman, with instructions to proceed at once to place the matter before the Canadian medical profession. Dr. William J. Mayo, Rochester, Minn., read a paper on "The Removal of Sigmoid Tumors," and was subsequently made an honorary member of the association. The address in surgery, on "Cancer of the Prostate," was delivered by Dr. James Bell, Montreal; and the address in medicine, on "Certain Aspects of the Typhoid Problem," by Prof. J. George Adami, Montreal. The scientific part of the meeting, which was exceedingly well-arranged, was conducted under five sections: General medicine; surgery; obstetrics and gynecology; pathology; eye, ear, nose and throat. In the latter section, Dr. Richard A. Reeve, Toronto, delivered an address on "The Present Status of [illegible]" and in the section on obstetrics, Dr. Adam [illegible] delivered the address. There was held a [illegible] diseases of the kidney, introduced by Dr. R. P. Campbell, Montreal, who dwelt largely on the technic of cystoscopy. He was followed by Dr. Walter McKeown, Toronto, who attended to the surgical aspect of kidney diseases, particularly confining his attention to movable kidney. Dr. John T. Fotheringham, Toronto, dealt with the subject of treatment. Dr. Mayo also contributed to the discussion on this symposium. One of the features of the meeting was the discussion on interprovincial registration, introduced by Dr. Robert H. W. Powell, Ottawa, who took charge of a resolution in the absence of Dr. Thomas G. Roddick, Montreal, whose name has long been identified with this subject. Dr. Powell, after reviewing this matter thoroughly, fathered a resolution which called for an amendment to the present Canada Medical Act, to the effect that whenever five or more provinces shall cause to be ratified the Canada Medical Act in their respective legislatures, these provinces may have interprovincial registration. Representatives were present from every province and it transpired that each province was in favor of dominion registration, some favoring reciprocity with Great Britain in order to thus bring about interprovincial registration. The executive council appointed a special committee to carry on the work to a successful completion. 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LONDON LETTER

(From Our Regular Correspondent)

LONDON, Aug. 28, 1909.

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Nursing in Warfare: Enlarged Scope of the Red Cross Society

An important development of the new territorial army scheme "for the organization of voluntary aid in England and Wales" has been made by the War Office. The scheme for consolidating the medical profession into a homogeneous voluntary corps for service at home in time of war has been previously described in THE JOURNAL. A similar plan has now been promulgated for a nursing service. At present there exist in this country two organizations of which the government has made use. These are the Red Cross Society, which was formed to aid the sick and wounded in warfare, and the

the state forestry reservation, Huntingdon county, August 11 and 12, to select a new site for the State Tuberculosis Camp. Dr. Dixon states that a camp for incurables will be established and if the site prove suitable, a camp for incipient cases will also be arranged.

Society Meetings.—The fourth annual meeting of the Fifth Councilor District Medical Society was held in Gettysburg, August 10. The following officers were elected: President, Dr. Walter H. O'Neal, Gettysburg; vice-president, Dr. William E. Wolff, Arendtsville; and secretary-treasurer, Dr. George E. Holtzapple, York. Hanover was selected as the next place of meeting.——Dauphin County Medical Society, at Harrisburg, August 17, recommended the expulsion from the society of all physicians doing lodge or contract practice, and of members meeting and consulting with physicians engaged in lodge or contract practice.——At the sixth annual meeting of the Northwestern Medical Society, composed of members of the medical societies of Warren, Erie, Mercer, Crawford, McKeown and Venango counties, held in Cambridge Springs, August 25, vaccine therapy was the principal subject of discussion. The officers of the previous year were re-elected.

Philadelphia

Milk Dealers Must Be Licensed.—Under the rules drafted by Director Neff of the Bureau of Health, and approved by the state and national authorities, and by the milk exchange, all milk dealers will be required to take out a license issued by the Department of Health. Fresh milk must contain 12 per cent. of milk solids, including 3 per cent. of butter fat; cream must contain 15 per cent. of butter fat, and skim milk 8½ per cent. of milk solids, exclusive of butter fat. Except in the case of modified milk, the addition of ice will be classed as adulteration.

Work Against Tuberculosis.—The Metal Polishers and Buffers International Union has decided to tax its members to found a house for members ill with tuberculosis. The average life of metal polishers is thirty-four years, or six years less than that of ordinary individuals.——The Independent Order of the Sons of Jacob has pledged financial support for the maintenance of a dispensary to be called the Jewish Consumptive Institution, and to work in conjunction with the Philadelphia Jewish Consumptive Sanatorium, Eagleville. The dispensary is to care for all cases of tuberculosis which cannot be treated in sanatoria.

Personal.—Dr. John B. Stetson has been provisionally appointed third assistant bacteriologist of the bureau of health, vice Dr. Mortimer Herzberg, resigned.——Dr. Joseph P. Walsh has been appointed consulting physician to the department of tuberculosis in the Philadelphia General Hospital, vice Dr. Lawrence F. Flick, resigned.——Dr. James T. Schell, chief surgeon of the Northwestern General Hospital, had his automobile demolished in a collision with a trolley car, but luckily escaped without injury.——Dr. Allen J. Smith has been appointed dean of the Medical Department of the University of Pennsylvania, vice Dr. Charles H. Frazer, resigned.

VIRGINIA

Physicians Liable to Arrest.—By alleged disregard of the postal regulations prescribing how bacteriologic specimens may be sent through the mails, a number of physicians of the state have been threatened with arrest by the postal authorities.

Building for Physicians.—A building is contemplated in Richmond to be occupied exclusively by physicians and dentists. A lot has been selected in the central part of the city, and the Academy of Medicine has already agreed to rent rooms in the building if erected.

Personal.—Dr. May Farinholt Jones, assistant resident physician at the State Hospital for the Insane, Williamsburg, has resigned.——Dr. Thomas J. Pretlow has been elected health officer of Newport News.——Dr. William D. Tewksbury has been appointed superintendent of the Virginia State Tuberculosis Sanatorium, Katawba.

GENERAL NEWS AND COMMENT

New Hawaiian Hospital.—The Maui, Hawaii, Agricultural Company has erected a hospital at Paia for the accommodation of its employés, at a cost of about $15,000. The hospital is 147x108 feet, two stories in height, and equipped with all modern appliances.

Clinical Research.—A circular letter has been issued signed by Dr. James Krauss, Boston, calling a meeting at John Ware Hall, Boston Medical Library, October 27, at 10 a. m., which has for its objects the establishment of an American Association of Clinical Research; the establishment of clinical research on an incontrovertible scientific basis in hospitals, and the institution of an American Journal of Clinical Research, in which the work of the members of the association and others doing clinical research work in a scientific manner shall be published.

Interstate Club Organized.—The Interstate Medical Club has been organized with a membership composed of physicians living in Breckenridge, Minn., Wahpeton, N. D., and surrounding towns in Minnesota and North Dakota. The following officers have been elected: President, Dr. Timothy O'Brien, Wahpeton, N. D.; vice-president, Dr. Nathan F. Doleman, Tintah, Minn.; secretary, Dr. C. P. Rice, Breckenridge, Minn.; treasurer, Dr. Louis W. Armstrong, Breckenridge, Minn., and censors, Drs. Tobias L. Birberg, Campbell, Minn., A. Victor Young, Hankinson, N. D., and Robert H. Devine, Wahpeton, N. D.

Officers Elected.—At the annual meeting of the Medical Section of the National Fraternal Congress, held in Boston, August 17, the following officers were elected: President, Dr. Wallace K. Harrison, Chicago; vice-presidents, Drs. Isabella M. Holdon, Port Huron, Mich., and Elmore S. Pettyjohn, Topeka, Kan.; secretary, Dr. John G. McConnell, Chicago; and treasurer, Dr. Elizabeth M. Hooper, Port Huron, Mich.——At the International Congress on Psychology, held in Geneva, August 6, the invitation to hold the next congress in Boston in 1913 was accepted. Prof. William James, Cambridge, Mass., was elected honorary president; Prof. James M. Baldwin, Baltimore, president; and Drs. Edward B. Titchener and James McK. Cattell, New York City, vice-presidents.

Congress of Colored Physicians.—At the eleventh annual meeting of the National Medical Association, held in Boston, August 24-26, under the presidency of Dr. Peter A. Johnson, New York City, the oration on medicine was delivered by Dr. Joseph J. France, Portsmouth, Va., on "The Treatment of Lobar Pneumonia." The following officers were elected: President, Dr. Marcus F. Wheatland, Newport, R. I.; vice-president, W. F. Lofton, D.D.S., Washington, D. C.; secretary, Dr. John A. Kenney, Tuskegee, Ala.; treasurer, Dr. A. Wilberforce Williams, Chicago, and executive board, Drs. Nathan F. Mossell, Philadelphia; Robert F. Boyd, Nashville, Tenn.; George C. Hall, Chicago; Albert R. Collins, Washington, D. C.; Mahlon A. Van Horn, Newport, R. I.; Charles H. Shepherd, Durham, N. C.; Amanda V. Gray, Washington, D. C.; G. E. Cannon, Jersey City, N. J., and Willis W. Steers, Decatur, Ala. It was voted to hold the next meeting in Washington, D. C.

Antituberculosis Work Among Negroes.—Surgeon Charles P. Wertenbaker, P. H. and M.-H. Service, has suggested a plan for the organization of an antituberculosis league for negroes. The plan is that the vice-president of each county society call together the leading negro ministers, physicians, teachers, etc., and induce them to start a branch of the league in each negro church in the county. Any colored person may become a member of the branch league by payment of the annual dues, and will receive a certificate of membership and be furnished a button bearing the words, "Colored Antituberculosis League," which surrounds a double red cross. The fund from the annual dues is to be used for the care and treatment of society members of that league as may have tuberculosis, and for dissemination of information by publication and lectures, and the establishment of dispensaries, sanatoria, etc. The state league of Georgia has already completed its organization and a number of branch church leagues have already been formed.

CANADA

Canadian Medical Association.—The forty-second annual meeting of the Canadian Medical Association, held in Winnipeg, Man., August 23 to 25, was in many respects the best meeting in the history of the organization. The attendance was the largest in its history, as 338 registered, and this, in view of the fact that the annual fee had been raised from $2.00 to $5.00, speaks well for the enthusiasm pervading the organization. Perhaps the desire to see established an official medical journal for the association may account for this. The executive council placed this matter in the hands of the finance committee, of which Dr. John T. Fotheringham, Toronto, formerly editor of the *Canada Lancet*, is chairman, with instructions to proceed at once to place the matter before the Canadian medical profession. Dr. William J. Mayo, Rochester, Minn., read a paper on "The Removal of Sigmoid Tumors," and was subsequently made an honorary member of the association. The address in surgery, on "Cancer of the Prostate," was delivered by Dr. James Bell, Montreal; and the address in medicine, on "Certain Aspects of the Typhoid Problem," by Prof. J. George Adami, Montreal. The scientific part of the meeting, which was exceedingly well-arranged, was conducted under five sections: General medicine; surgery; obstetrics and gynecology; pathology; eye, ear, nose and throat. In the latter section, Dr. Richard A. Reeve, Toronto, delivered an address on "The Present Status of [illegible] the section on obstetrics, Dr. Adam [illegible]red the address. There was held a [illegible] of the kidney, introduced by Dr. R. P. Campbell, Montreal, who dwelt largely on the technic of cystoscopy. He was followed by Dr. Walter McKeown, Toronto, who attended to the surgical aspect of kidney diseases, particularly confining his attention to movable kidney. Dr. John T. Fotheringham, Toronto, dealt with the subject of treatment. 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St. John's Ambulance Association, the object of which is to train persons to render "first aid" in the accidents of civilian life. The new organization is modeled on those which exist in foreign countries, notably Japan and Germany. The county system has been adopted because it is on this that the territorial force is organized. Each county association will, through the medium of the local branches of the Red Cross Society, form "voluntary aid detachments" of men and women. The men's detachments will be specially employed in preparing means of transport by road, in converting local buildings into suitable clearing hospitals for the slightly wounded near the area of operations. They must be thoroughly trained as stretcher-bearers, and to a certain extent as male nurses. Some will be trained in sanitary work such as disinfection of buildings. Each detachment should contain some men who are expert carpenters and mechanics. The women's detachments will be employed chiefly in forming railway rest stations for preparing and serving food to the sick and wounded during evacuation by railway and for taking temporary charge in the evacuation stations or temporary hospitals of the severely wounded who are unable to continue the journey. The Red Cross Society is fully competent to work the new scheme. Its services in time of war have been many and great. To go no farther back than the Franco-Prussian war it then provided $1,100,000 for the aid of the sick and wounded.

The Influence of Feeding on the Development of Jewish and Gentile Children

At the health congress at Leeds, Dr. William Hall read a very interesting paper on a subject of which he had made a special study—"The Influence of Feeding on the Development of Aryan and Semitic Children Born and Bred in Leeds." He pointed out that the Jewish woman possesses the instinct of feeding her child which the Gentile woman has lost. Hence the prevalence of rickets among Gentile children. Fifty years ago bow-legs were uncommon; now they were seen everywhere, but not in the Jews. Ninety per cent. of Jewish mothers fed their children from the breast; from 85 to 90 per cent. of Gentile mothers did not. The poor Jewish woman when pregnant was looked on as a sacred object. She was guarded against alcohol, prolonged labor and insufficient food. The Jewish child had therefore two advantages over the Gentile—before birth and in the first twelve months of life. Later they showed a greater power of resisting infectious diseases; 97 per cent. of them were able to attend school continuously for five years. This power could not be due to their surroundings, for their houses were not clean, and often very dirty. But they had clean food and they freely used oil, fish and eggs. This Dr. Hall regarded as the great secret of their health. During the last six years he had adopted the Jewish method of feeding children and had seen bow-legs straighten out under it

Irish Vital Statistics

The forty-eighth annual report of the Registrar-General for Ireland shows for the first time in more than half a century an increase of population. The increase is small, only 1,853, but its importance is great, as it marks the end of the depletion of the population by emigration. The excess of births over deaths was 25,148, and the loss by emigration 23,295. This is a great decrease on the ordinary emigration figures, which averaged for the decade 1898-1907, 38,036. The most important causes which have led to this decline of emigration are the development of the economic resources of the country, especially agriculture, and the almost complete settlement of the long and bitter agrarian struggle. The marriage rate was 5.2 per 1,000, an increase of 0.1 per cent. compared with the average for the preceding decade.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Aug. 17, 1909.

Personals

I must again begin with the announcement of the death of one of our most distinguished professors. August 16 von Bollinger, professor of pathologic anatomy at Munich, died of heart disease at the age of 66. He was the rector of the University of Munich this year, so that his loss is mourned in wider circles than the medical. He became privat-docent for comparative pathology at Munich in 1870, the next year he accepted a call to Zurich to the newly-established chair of pathologic anatomy and physiology in the veterinary school. At the same time he was privat-docent at the university and a teacher in the agricultural department in the polytechnic school. In 1874 he became professor of pathology in the veterinary school at Munich and of [illegible] the university. In 1880 he was ma[illegible] anatomy and director of the pathologic institute as successor of his former teacher, Professor v. Buhl. His most notable works are the discovery of the actinomycosis fungus, his investigations on the pathology of anthrax, on tuberculosis from food and on the so-called Munich beer-heart. Professor von Bollinger was greatly interested in all that concerns practicing physicians. He took a great part in the development of the *Münchener medizinische Wochenschrift*, being the business manager in the group of fourteen physicians who publish it, and its success is due to him in no small degree.

The Campaign Against Tuberculosis

A police ordinance of the duchy of Anhalt goes to great lengths in limiting the liberty of consumptives in order to prevent the communication of their disease. The ordinance forbids patients of the sanatoria for pulmonary invalids from remaining in the closed rooms of the hotels and saloons. The proprietors are also forbidden to receive temporarily the patients in the enclosed spaces of their premises. The furnishing of alcoholic drinks to the patients is forbidden. The hotel-keepers are also required carefully to clease in hot 2 per cent. soda solution any eating and drinking utensils which have been used by these patients outside of the closed rooms of their places, immediately after their use, and separately from the dishes which are intended for general use.

Centennial of the Berlin University

The centennial jubilee of the Berlin University will be held next year, and the 10th to 12th of October are appointed for the celebration festivities. Oct. 10, 1810, the installation of the first sixteen Berlin professors occurred in the university building; among these the only medical man was the distinguished Hufeland. For the celebration, in addition to a memorial chapel service and a torchlight procession by the students there will be the special assembly, the *Festakt*, in the university hall, at which the present rector of the university, the renowned literary historian, Prof. Erich Schmidt, will deliver an address. The close of the festivities, as is usual in Germany, will be marked by a *Kommers*. In consideration of the great importance of the Berlin University in the development of science in general, and not least of medicine, there is reason to expect that the festival will be largely attended by the people of our own and of foreign countries.

The Imperial Insurance Bill

The strife against the imperial insurance bill has lessened somewhat. A few days ago a convention of the German local *Krankenkassen* was held at which a very decided position was taken in opposition to the demands of physicians. It is officially announced that the bill has been lately discussed by the federal council (*Bundesrat*) and been accepted in its important provisions. But in its details it has received in part some marked alterations. The new bill as it will be presented to the Reichstag for discussion is awaited with anxiety. It will depend essentially on the delegates to the Reichstag to what extent the law will be adapted to the wishes of the medical profession.

Limitation of the Use of Narcotics by Dentists

The employment of narcotics and analgesics by dentists is forbidden by ministerial decree. In pursuance of this the Berlin chief of police has forbidden pharmacists to furnish materials of this kind to dentists.

The German Medical Association at Lübeck

At the annual meeting of the national medical association, the *Aerzte-Vereinsbund*, 333 affiliated associations, with 222,484 members were represented. This is the highest attendance ever recorded.

The most important question taken up at this annual meeting, the *Aerztetag*, held on June 25 and 26, was the proposed imperial insurance law. And, as was to be expected, the association unanimously expressed the opinion that the provisions of the bill which affect the regulation of the relations between physicians and the Kankenkassen would be unacceptable to the medical profession. The association declares that the bill of the imperial insurance law constitutes an exceptional and antagonistic law against physicians and it notifies the imperial government that if this bill shall become a law, no physician belonging to the national medical association, the *Aerzte-Vereinsbund*, will any longer associate himself with industrial insurance. The medical association declares that it will not be satisfied with this legal regulation of the relations between physicians and the insured unless the following demands, not separable from one another, are incorporated in the law: Only those physicians are to be permitted to practice for the Krankenkassen who submit themselves to the conditions of a contract agreed on between the representatives of the organized physicians and the Krankenkassen respectively.

Exceptions shall be permissible only on the basis of general agreements between the Krankenkassen and the representatives of physicians. In every insurance district a commission of contracts must be established on an obligatory footing of equality, to which the agreements between the physicians and the Krankenkassen shall be submitted; also an arbitration committee and arbitration court, on a footing of obligatory equality, for appeal. The right of free medical treatment is, in general, to be limited to those possessing not more than a total income of $480 (2,000 marks).

These propositions and the reasons therefor are to be presented in due form to the federal council; the Reichstag, the governments of the separate states, and the imperial department of the interior. I believe that the government will heed this unanimous declaration of German physicians and that at least the most important of the above mentioned demands will be inserted in the bill. It will have to be subjected to a thorough revision for protests against many of its provisions have been raised by various trade circles. Whether the demands of the physicians will secure a majority in the Reichstag is quite uncertain for the struggle of the physicians, which is surely justified as a fight for their own professional interests but is naturally regarded as in its tendency opposed to the general ideals of social legislation, finds little sympathy among those parties which are interested in social legislation in its widest sense.

Among these parties are included not only the social democrats as representatives of the laboring classes (the majority of the insured) but also a large part of the central and the liberal parties. Should the Reichstag find itself not prepared to comply with the demands of the physicians, we may expect without doubt a severe struggle. If the physicians actually carry out the resolution adopted at the *Aerztetag* to refuse their cooperation in carrying out the social legislation, it might very likely happen that the Reichstag would again introduce the law compelling medical service, according to which every physician is bound to render his assistance in urgent cases. This law existed in Germany until 1869 and naturally was the source of numerous intolerable situations for the medical profession. It will be a severe blow to our liberty if the legislature should resort to such a regulation. Let us hope that this danger will be avoided.

Among the other subjects before the association, the only one of interest to your readers is the report of the hospital commission. The relations of the hospital physicians in many places are still quite faulty, not only with reference to fees but also in the arrangement of the service, inasmuch as many hospital physicians do not have the superintendence, but are to a certain extent the subordinates of "mother superiors," etc. Moreover, in relation to notice of dismissal and to right of pension the hospital physicians have not the standing to which they are entitled. The hospital commission makes the following propositions for the improvement of the position of the physicians: Not merely the medical but the entire superintendence of the hospital with complete independence should be demanded for the physician. He should be appointed by a written contract, should be responsible only to the owner and is to be regarded by the outside world as the official representative of the institution conducted by him. In regard to the management of the institution it may be conducted by the directing physician himself with non-professional boards of managers subordinated to him, or there may be an incorporated managing body (*Kuratorium*, city commission, etc.). In the latter case the following requirements should be enforced: The physician should be chairman or at least should have membership and vote in such a corporation. He should independently decide under all circumstances with reference to the reception, distribution and discharge of patients, the nursing service, the medical part of the correspondence, the hygienic, sanitary and other medical measures in the business conduct of the institution, regarding the supply of medicines, instruments and nursing materials inside the institution. He should be the head of the entire force of employés and have the right to a full insight into the business of the management and cooperation in the choice of employés, the giving of references, the planning of buildings, etc. The directing physician has the right to a sufficient auxiliary service, especially sufficient medical assistance. The subordination of the physician to a layman and the immediate interference of layman and lay commissions, directresses, etc., in the management independently of the physician, should not be permitted. The physician should receive a definite salary, to increase with the period of service, with retiring pension. He should be entitled to demand a fee in the case of all paying patients in the hospital (a discontinuation of the present duty of gratuitous treatment of patients with means). These principles should hold especially for such hospital physicians as occupy the position as their chief employment, and they are to be reasonably adapted to other conditions. Existing relations should be altered only at the desire of the present occupant of the place or on the occurrence of a new appointment.

Pharmacology

Solubility

A knowledge of the solubility of substances is of great importance to the physician, so that he may not order more of an article than will dissolve in the solvent used and so that he may avoid incompatibilities. The Pharmacopeia very properly gives exact information of the solubility of the various drugs.

These facts may be of use to the pharmacist and the chemist, but they are seldom presented in a form to be readily appreciated or easily remembered by the practicing physician. M. I. Wilbert (*Am. Drug. and Pharm. Rec.*, July 12, 1909) suggests that definite values be assigned to certain adjectives by which the limitations of solubility could be expressed without exact figures. He proposes the following definitions for the Pharmacopeia:

Very Soluble: Articles that are soluble in less than 1 part of solvent.
Freely Soluble: From 1 to 10 parts of solvent.
Soluble: From 10 to 100 parts of solvent:
Slightly Soluble: From 100 to 1,000 parts of solvent.
Very Slightly Soluble: From 1,000 to 10,000 parts of solvent.
Nearly Insoluble: From 10,000 to 100,000 parts of solvent.
Practically Insoluble: More than (+) 100,000 parts of solvent.

The same definition might be stated in another form, thus: 100 c.c. of solvent will dissolve 100 gm. or more of a "very soluble" substance; 10 to 100 gm. of a "freely soluble" substance; 1 to 10 gm. of a "soluble" substance; 0.1 to 1 gm. of a "slightly soluble" substance; 0.01 to 0.10 gm. of a "very slightly soluble" substance; 0.001 to 0.01 gm. of a "nearly insoluble" substance; less than 0.001 gm. of a "practically insoluble" substance.

Such terms would be easily understood and if need be could be memorized or the principal official articles could be tabulated as to their solubility for ready reference. The exact solubility of a substance is not readily ascertained since many factors influence this property, notably temperature, physical condition of the substance, and the presence of impurities or of other substances in solution. As a consequence Wilbert shows that there is marked discrepancy between the figures given for the same substance by different authorities. Thus the following is the solubility of acetanilid as given in the several authoritative books:

Solubility in	U.S.P.	B.P.C.	Ph.Brit. Ph.Hisp.	Ph.Ned.	Ph.Helv. Codex.	Ph.Germ. Ph.Belg. Ph.Dan. Ph.Svec.	Ph. Austr.
Water	179	190	200	210	220	230	250
Alcohol ...	2.5	4	3.5	3.6	3.5	3.5	3.5

Attention should be called to the frequent confusion between the terms "slightly" and "difficultly" or "slowly" soluble. A substance difficultly soluble may eventually dissolve in considerable quantity while a substance slightly soluble even if made to enter into solution in quantities above the ordinary limit will separate out on cooling or on standing. Statements of solubility should indicate the temperature and for medical purposes should be calculated for a temperature which is approximately that of the ordinary living room, say 20 C. (68 F.).

Correspondence

Unwise Recommendation of Acetanilid in Heart Failure

To the Editor:—After all the painstaking work done of late to enlighten the profession at large on the dangers of acetanilid et al. (The Journal, July 24, etc.), it is discouraging to me to observe that Dr. A. C. Klebs, in his otherwise valuable work on tuberculosis, just issued, lists acetanilid as a heart-stimulant under the heading, "For Tendency to Heart-Failure," p. 823. While the small dose advised might not prove dangerous, except in advanced cases, it is certainly inconsistent with our knowledge of the physiologic action of acetanilid to recommend it as a remedy to combat heart-failure in a disease in which the heart is most often seriously encumbered.

Erneste Johansen, M.D., San Francisco.

The Smith Operation for Cataract

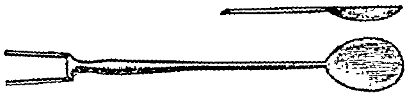
To the Editor:—The paper Dr. Würdemann read at Atlantic City on "Expression of Cataract in Its Capsule" [The Journal, September 4] is misleading to the casual reader.

He quotes as follows from a paper written by Elschnig in 1908: "The lens is expelled after incision of about one-third of the circumference made with a conjunctival flap and an upward iridectomy, either by means of gentle pressure or with the flat spoon acting purely as a gliding surface." Würdemann states that "the above description of Pagenstecher's operation on cataract in the unopened capsule is as short and accurate as has yet been given. Examine these words closely, the various essays of Pagenstecher, digest them, then follow up by reading the essays of subsequent writers, as Cassiani, Gradenigo, Gayet, Landesberg, and other foreign writers, Roosa, Andrew, Henry Smith, Oxley, Maynard, Herbert, Cheney and Greene, then come back to the original of Pagenstecher and give credit for devising the operation in all its details where it belongs, not to later operators, even though of astounding skill, sufficiency and experience."

Again, "But on referring to the original author and in correspondence with German writers, I now fully agree with Elschnig (editor of Czermak's *Augenärztlichen Operationen*) in a letter to me of Feb. 1, 1909, in which he says: 'Pagenstecher's operation is quite the same as Smith's.'"

Dr. Würdemann's paper seems to have been written on the text above quoted from Elschnig's paper of 1908, and all other things made to do service for that quotation. Why does Dr. Würdemann, when enumerating papers by the Pagenstechers, not include any paper written between 1888 and 1908. In 1903 I paid a visit to Pagenstecher and his clinic at Wiesbaden and I have to thank him for his courtesy. He received me in the following terms:

"You are the most interesting man in the world to me. I have advocated extraction in the capsule for the past thirty years, but I have given it up on account of the amount of escape of vitreous. Your operation is quite different. I shall be so much obliged if you will show me how to do it." I then showed him how to do it. Again, "I should be so much obliged if you would preside over me doing it." I did so. He then said: "The best operation in the world, I will now do nothing else."



This explains the hiatus between 1888 and 1908 above noted, and explains why Pagenstecher's operation to-day is the same as Smith's. See the Pagenstecher spoon of the olden days (accompanying illustration). How could this instrument be used as an "inclined plane?" Such is impossible. It was devised to turn concave surface downward after the incision to press on the zonula at the incision and thus dislocate the lens there at least and then to turn concave surface upward to be slipped in through the opening made by thus detaching the zonula, behind the lens and to lift out the lens on it through a "third circumference incision," which means that the capsule would rupture in almost every case. This incision is not big enough, half the circumference would be barely big enough as it has to let out both the spoon and the cataract. Even when no spoon is inserted, the man with considerable experience of the present day operation would be well advised to make his incision half or very nearly half the circumference of the sclero-cornea, if he wishes to avoid mishaps. An incision one-third of the circumference in size, as attributed to Pagenstecher is courting difficulties amounting almost to impossibilities at every step and is courting "slow healing" among other things owing to the excessive manipulation required.

Henry Smith, M.D.
Major Indian Medical Service, Jullendur, India.

The Public Service

Medical Department of the Army

Changes for the week ended Sept. 4, 1909:

Porter, E. H., M. R. C., granted leave of absence for 1 month.

Porter, E. H., M. R. C., relieved from duty at Fort Worden, Wash., to take effect on expiration of leave of absence, and will proceed to his home when he will stand relieved from active duty in the M. R. C.

Hughes, L. S., M. R. C., relieved from duty at Ft. Lawton, Wash., and ordered to Fort Worden, Wash., for duty.

Ford, C. S., major, ordered, on the expiration of his present leave of absence, to proceed to Fort Logan, Colo., for duty.

Coffin, H. L., M. R. C., leave further extended two months.

Le Wald, L. T., capt., leave of absence extended 6 days.

Edger, B. J., Jr., major, granted 2 months' leave of absence, with permission to go beyond the sea, to take effect when discharged from treatment at the Army General Hospital, Presidio of San Francisco.

Wooley, H. C., M. R. C., granted leave of absence for one month, with permission to apply for an extension of one month. So much of par. 18, S. O. 174, July 29, 1909, W. D., as relieves Lt. Wooley from active duty in the M. R. C. is so amended as to take effect on the expiration of his leave of absence.

Kendall, W. P., major, granted leave of absence for one month, to take effect about Sept. 10, 1909.

Hull, A. R., M. R. C., granted thirty days' leave of absence when his services can be spared.

Norman, Seaton, M. R. C., ordered to active duty and assigned to Ft. Leavenworth, Kan.

Philips, H. F., M. R. C., ordered to active duty, and assigned to Ft. Sam Houston, Tex.

McCaw, W. D., Kean, J. R., Lt.-cols., and Ireland, M. W., major, detailed as delegates to represent the medical department of the Army at the meeting of the Association of Military Surgeons of the United States, to be held in Washington, D. C., Oct. 5 to 8, 1909.

Wheate, J. M., M. R. C., ordered from Ft. Lincoln, N. D., to Ft. Snelling, Minn., for temporary duty.

Ware, W. H., dent. surg., ordered to proceed to San Francisco, and on arrival, report by telegraph to the Surgeon General of the Army, for annulment of contract.

Cook, G. W., Jones, E. C., Knox, H. A., Mount, J. R., M. R. C., relieved from duty at their present stations and ordered to report on Oct. 1, 1909, to Col. Valery Havard, M. C., president, Army Medical School, at Washington, D. C., for a course of instruction in that school.

Medical Corps of the Navy

Changes for the week ending Sept. 4, 1909.

Wilson, H. D., surgeon, detached from the *Indiana* and granted leave for two months.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Sept. 1, 1909:

Cofer, L. E., assistant surgeon-general, directed to proceed to Cape Charles Quarantine Station and Fisherman's Island, Va., on special temporary duty.

Rosenau, M. J., surgeon, granted 4 months' leave of absence from Oct. 1, 1909.

Nydegger, J. A., surgeon, granted 1 month and 7 days' leave of absence from Sept. 10, 1909.

Sprague, E. K., surgeon, granted 1 month's leave of absence from Sept. 8, 1909.

Wickes, H. W., P. A. surgeon, granted 15 days' leave of absence from Sept. 1, 1909.

Cumming, Hugh S., P. A. surgeon, leave granted July 8, 1909, amended to read 1 month from Aug. 9, 1909.

Foster, M. H., P. A. surgeon, relieved from duty at Elis Island, N. Y., and detailed to accompany the Agent of the Immigration Board of the Territory of Hawaii to the Madeira and Azores Islands.

Gwyn, M. K., P. A. surgeon, leave granted Aug. 17, 1909, for 7 days from Aug. 17, 1909, amended to read 5 days.

Wille, C. W., P. A. [illegible] ays' leave from Sept. 12.

Boggess, J. S., P. [illegible] from duty on Revenue Cutter *Tahoma*, and [illegible] Chicago, and report to the Medical Officer in Command for duty and assignment.

Stimson, A. M., P. A. surgeon, granted 7 days' leave of absence from Aug. 23, 1909.

Sweet, E. A., P. A. surgeon, relieved from duty at Boston, Mass., and directed to proceed to Ellis Island, N. Y., and report to the Chief Medical Officer for duty.

Wollenberg, R. A. C., asst.-surgeon, directed to proceed to Rotterdam, Holland, on special temporary duty.

Atilles, Pedro del V., acting asst.-surgeon, leave of absence granted Aug. 4, 1909, amended to read 30 days' leave from Aug. 18, 1909, with pay, and 15 days from Sept. 17, 1909, without pay.

Browne, R. W., acting asst.-surgeon, granted 1 day's leave of absence, Aug. 31, 1909.

Cleaves, F. H., acting asst.-surgeon, granted 21 days' leave of absence from Sept. 13, 1909.

Feblan, J. J., acting asst.-surgeon, granted 10 days'. leave of absence from Aug. 28, 1909.

Horning, H., acting asst.-surgeon, granted 7 days' leave of absence from Aug. 23, 1909, under paragraph 210, Service Regulations.

Jackson, J. M., Jr., acting asst.-surgeon, granted 5 days' leave of absence from Aug. 20, 1909.

McLarty, A. A., acting asst.-surgeon, granted 10 days' leave of absence from Aug. 27, 1909.

Spohn, A. E., acting asst.-surgeon, granted 1 month's leave of absence from Aug. 1, 1909, with pay, and 2 months from Sept. 1, 1909, without pay.

PROMOTION

Assistant Surgeon Francis A. Ashford, commissioned a Passed Assistant Surgeon (recess), to rank as such from Aug. 11, 1909.

BOARD CONVENED

Board of medical officers convened to meet at the Marine Hospital office, Galveston, Tex., Aug. 31, 1909, for the purpose of making a physical examination of an officer of the Revenue Cutter Service.. Detail for the board: Passed Assistant Surgeon G. M. Corput, chairman; Acting Assistant Surgeon Wm. H. Gammon, recorder.

Health Reports

The following cases of and deaths from smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ended Sept. 3, 1909:

SMALLPOX—UNITED STATES

Illinois: Chicago, Aug. 14-21, 1 case.
Minnesota: Duluth, Aug. 13-20, 1 case.
Montana: General, July1-31, 44 cases.
Ohio: Toledo, July 24-Aug. 7, 2 cases.
Oklahoma: Oklahoma City, Aug. 7-21, 1 case, 1 death.
Tennessee: Knoxville: Aug.14-21, 1 case.
Texas: Houston, March 20-June 19, 20 cases.

SMALLPOX—FOREIGN

Algeria: Algiers, July1-31, 1 death.
Brazil: Bahia, June 25,-July 16, 7 cases, 3 deaths; Pernambuco, May 15-31, 7 deaths.
Chile: Valparaiso, July 3-31, present.
Egypt: Cairo, July 1-8, 1 case, 1 death.
France: Toulon, July 24-31, 1 death.
India: Bombay, July 13-20, 3 deaths; Calcutta, July 3-10, 2 deaths; Rangoon, July 3-17, 4 deaths.
Indo-China: Saigon, July 3-10, 7 cases, 5 deaths.
Italy: General, Aug.1-8, 1 case; Genoa, July 8-15, 2 cases; Naples, Aug. 1-8, 34 cases, 2 deaths.
Portugal: Lisbon, July 31-Aug. 7, 6 cases.
Russia: Odessa, July 24-31, 1 case, 1 death; Riga, July 31-Aug. 7, 4 cases; St. Petersburg, July 17-24, 41 cases, 6 deaths.
Spain: Barcelona, Aug. 3-9, 4 deaths; Madrid, July 1-31, 81 deaths; Valencia, July 24-31, 1 case; Vigo, July 31-Aug. 7, 1 death.
Straits Settlements: Singapore, July 3-10, 1 death.

YELLOW FEVER

Brazil: Bahia, June 25-July 2, 2 cases.
Ecuador: Duran, July 16-31, 3 cases.
Mexico: Colima, July 30-Aug. 26, 8 cases; Merida, Aug. 14, 1 death.

CHOLERA—FOREIGN

China: Amoy, July 17-24, 9 deaths.
India: Bombay, July 13-20, 17 deaths; Calcutta, July 3-10, 28 deaths; Madras, July 10-16, 2 deaths; Rangoon, July 3-17, 9 deaths.
Indo-China: Saigon, June 26-July 3, 3 cases, 3 deaths.
Netherlands: The Rotterdam, Aug. 26, 2 cases.
Russia: St. Petersburg, July 29-Aug. 13, 408 cases, 200 deaths.

PLAGUE

Brazil: Bahia, June 26-July 16, 5 cases, 2 deaths.
China: Amoy, July 17-24, 62 deaths; Canton, June 26-July 17, 45 cases, 34 deaths; Chang-Poo, July 23, epidemic; Kang-be, June 1-30, 61 cases, 59 deaths.
Egypt: General, July 23-29, 7 cases, 2 deaths; Alexandria, July 30-Aug. 2, 3 cases, 2 deaths.
Formosa: General, July 10-17, 3 cases, 3 deaths.
India: General, July 10-17, 800 cases, 613 deaths; Bombay, July 13-20, 25 deaths; Calcutta, July 3-10, 29 deaths; Rangoon, July 3-17, 40 deaths.
Indo-China: Saigon, June 26-July 3, 8 cases, 7 deaths.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TWO MORE CRITICISMS OF THE LANGUAGE OF MEDICAL WRITERS

To the Editor:—I agree with Dr. Keen's contention in THE JOURNAL (August 14, p. 572) that the use of "data is" is a violation of an obvious rule of grammar; yet I doubt very much whether this practice prevails on a larger scale than that of the unwarranted promiscuous use of "ought" and "should," of which Dr. Keen himself is guilty, when in the closing sentence of his second paragraph he says "But it ought never to occur." "Ought" is a defective verb and denotes a moral or a personal obligation; and "should" is the imperfect from of "shall," and may, though it does not always, imply a social obligation. Thus, we ought to obey the laws; but we should not give offense.. We should be good grammarians; but ought to be honest. Besides, the use of the neuter impersonal pronoun "it," in connection with the verb "ought," is an incongruous combination, and the sentence referred to should, therefore, read, "But it should never occur."

THOMAS J. MAYS, Philadelphia.

To the Editor:—Dr. Keen's letter concerning "data is," reminds me of some other errors in language that are widely prevalent in current medical literature. For instance "appendiceal" appears perhaps oftener than "appendical." While "appendiceal" is more euphonious there is no such word in the dictionaries. The word "starvation" is used incorrectly for "fasting;" and in your last index "fasting" does not appear, but "starvation" is used instead. "Starvation" was first used by Dundas in 1775, and comes from the Anglo-Saxon *steorfan*, "to die." Obviously we can not starve a patient unless we kill him. In a recent and perhaps one of the best works on abdominal surgery, "curetage" appears throughout the book. It should be "curettage." "Sequellæ is a less common mistake for "sequelæ." R. M. HARBIN, Rome, Ga.

ANSWER.—Both our correspondents appear somewhat hypercritical, in that each overlooks the fact that both settled usage and derivation are contributory factors in determining the proper use of words.

Dr. Mays, disregarding derivation, insists on a difference in the kind and degree of obligation expressed respectively by the words "ought" and "should," the former, he feels, implying a primary, intrinsic, or moral obligation, and therefore binding *per se*, while to the latter he accords only a secondary, social or extrinsic obligation. But "shall' (A. S., *sceal*) is the first and third persons singular of the A. S. verb *sculan*, to be obliged, to have to do, to owe (cf. the German *sollen*). At least as late as Chaucer's time "shall" was used as the equivalent of "owe:" "By the faithe I schal to God" (Troylus and Cryseyde, 1. 1600). There is, so far as derivation is concerned, no difference between "you should do it" and "you ought to do it." Both mean, "you owe the doing of it to some authority greater than your own mere volition." The distinction suggested by Dr. Mays, therefore, however convenient, is one to be settled merely by good usage; and it would hardly be difficult to show, from the masters of English literature, that such a distinction is not universal or even general. From this it follows, also, that whatever objection can be directed on the ground of "incongruity" against "it ought" must be equally applicable to "it should."

Dr. Harbin, in his criticism of the common use of "starvation" for mere privation from food, appears to err in the opposite direction. It is not practicable to rely solely on derivation to settle the meaning of words. Would Dr. Harbin, for example, restrict "villain" to its original sense of "a villager" or "knave" to that of "boy"? It is true that originally "to starve" meant to perish; it is allied to the German *sterben*. But in modern usage it means to deprive of nutriment or, in a secondary sense, of some other vital essential, to a degree perilous to life. When we wish to say that some one died from lack of food, it is not enough to say "he starved;" we usually say "he starved to death." We are willing to concede, however, that to describe the therapeutic withholding of food, the word "starvation" is hardly apt; for starvation is, properly speaking, always injurious, though not necessarily fatal; while "fasting" means simply the doing without food, and does not imply any injury. We assume, in any case, that the criticism of the title in our index is directed against the author of the paper, for it is obviously impossible, in indexing, to look up each article in the title of which there might be some slight ambiguity, and ascertain just what the author was talking about.

As to "appendiceal" versus "appendical," we note that while the Standard Dictionary gives "appendical," Dorland has "appendiceal." The English language has not been particularly careful, when adopting adjectival suffixes, etc., to restrict their use to their proper limitations. "Appendiceal" was probably formed on the analogy of "laryngeal," "pharyngeal," which in its turn followed "peritoneal;" but the *e* is in the stem in the last-named word, whereas in laryn-, pharyng-, it is not. These words would have been more correctly formed as laryngal, etc. "Appendiceal" is perhaps more euphonious, and will doubtless hold its own with "laryngeal," rather than be replaced by "appendical" on the more correct analogy of "cervical," "vesical," etc.

As to "curettage"—ignoring the derivation from the French *curette*—we may say that when a word ending with a stressed consonantal syllable adds further syllables, the consonant is generally doubled to retain the stress; cf. defer, deferring, remit, remittance. "Sequellæ" is the result of ignorance, pure and simple, and is one of the words that are constantly misspelled because they are constantly mispronounced. It is not "se-quell-æ," but "se-que-læ." This error is parallel to that of "combatting" for "combating," which has arisen from incorrectly laying the stress on the second, instead of on the first, syllable.

BINDING THE JOURNAL IN FOUR BOOKS A YEAR

To the Editor:—I have had my copies of THE JOURNAL bound for the past six years. The volumes are larger each year, which makes them at the present large, cumbersome and unhandy for ready reference. Can we not just as well have four volumes a year instead of two? E. L. DEWEY, Whiting, Ind.

ANSWER.—There is nothing whatever to prevent anyone who wishes from having his copies of THE JOURNAL bound in four parts to a year, that is, a book for each three months. One of the several sets bound for use in this office is treated in this way. For example, January, February and March of 1909, compose one book labeled "Vol. LII, Part 1," April, May and June are bound in another book labeled "Vol. LII, Part 2." If one wished, one could add the words "With Index" on the back of Part 2, but this is not essential as the user understands that the index is at the end of the second part. As to making four indexes a year, we think that few would prefer this plan. Although it would be an advantage at the immediate time, it would be a disadvantage afterward because it would require twice as much handling to look up an item in back years. A semi-annual index is considered the golden mean. During the issuance of the twenty-six numbers which make up a volume, the majority of readers can find items without much trouble, as they remember the approximate date, and an index is not so necessary. Looking back a year or two years, however, the more indexes there are the more labor there is to find an item, and frequently one wishes that the index were an annual one. Thus the semi-annual index has been evolved as the most desirable arrangement, especially for weekly publications.

One of our readers detaches the pages which are devoted to Current Medical Literature and binds these with the indexes to subjects and to authors. The remainder he binds with the General Index. This plan may commend itself to others.

Association News

NEW MEMBERS

List of new members of the American Medical Association for the month of August, 1909:

ALABAMA

Douglass, A. G., Birmingham.
Heacock, J. D., Birmingham.
McDowell, Wm. P., Eufaula.
Wheeler, W. C., Huntsville.
Williamson, G. W., Montgomery.

CALIFORNIA

Howe, L. P., San Francisco.
Liverman, J. R., San Bernardino.
Taylor, W. S., Livermore.
Taubles, G. H., San Francisco.

COLORADO

Asquith, A. C., Central City.
Burvenich, C. H., Denver.
Fish, J. B., Edgewater.
Ringolsky, Sol, Denver.
Pollock, R. M., Rocky Ford.

CONNECTICUT

Pike, Ernest R., Lakeville.

DISTRICT OF COLUMBIA

Kress, D. H., Takoma Park.
Parker, E. M., Washington.

GEORGIA

Baird, J. B., Jr., Atlanta.
Bradley, Frances, Atlanta.
Redwine, Word, Cassville.
Winchester, W. R., Macon.

ILLINOIS

Gaul, A. C. A., Chicago.
Miller, W. H., Galena.
Morrison, H. T., Jr., Springfield.
Sparling, A. M., Sailor Springs.
Weirick, A. J., Marseilles.

INDIANA

Asbury, W. D., Coalmont.
Hatfield, S. J., Indianapolis.
Randolph, Frank, Elkhart.

IOWA

Bush, F. W., Bagley.
Culverson, F. P., Greenfield.
Distad, O. E., Holmes.
Harper, J. A., Greenfield.
Harris, E. E., Grinnell.
Hearst, G. E., Cedar Falls.
McBurney, G. F., Belmond.
McGregor, J. C., Downey.
Mulhern, T. W., Greenfield.
Mullins, V. S., Atlantic.
Murphy, M. J., Cumberland.
Shelton, C. D., Bloomfield.

KANSAS

Haake, J. A., Peabody.
Yates, Chas. E., Maple Hill.

KENTUCKY

Montfort, Warren, Woodlake.
Perry, J. R., Fords-ferry.
Strother, J. W., Grayson.

LOUISIANA

Breamx, L. J., Scott.

MAINE

McFadyen, James, Hebron.

MARYLAND

Bates, J. H., Forest Park.

MASSACHUSETTS

Gates, R. E., Mansfield.
Hornbrook, F. W., Boston.
Janes, Jr., B. F., Northampton.
Kenealy, J. H., Natick.
Morse, R. S., Worcester.
Murphy, F. P., Lowell.

MICHIGAN

Fuller, R. T., Grand Ledge.
Jones, G. W., Imlay City.
Lee, E. C., Detroit.
Ross, Zimmerman, St. Ignace.

MINNESOTA

Morse, J. H., Minneapolis.
Schroder, C. H., Duluth.
Warham, T. T., Minneapolis.

MISSOURI

Coughlin, W. T., St. Louis.
Dunlop, H. E., Canton.
Parman, D. R., St. Louis.
Reber, R. L., St. Louis.
Toney, G. W., Fulton.

MONTANA

Parsons, H. H., Missoula.

NEBRASKA

Conlin, F. M., Omaha.

NEW JERSEY

Farr, Jr., J. C., Hoboken.
Whitehead, H. Eugenia, Mt. Holly.

NEW YORK

Davis, W. W., Chester.
Frisch, Frederick, Buffalo.
Michaelis, Julius, Brooklyn.
Peebles, Martha J., Brooklyn.
Robinson, J. A., New York City.
Shaw, G. H., Baldwinsville.
Story, C. B., Bayside.
VanBeuren, Jr., F. T., New York City.
Wolf, C. G. Leo, Niagara Falls.

NORTH CAROLINA

Bolles, C. P., Wilmington.
Horton, W. C., Raleigh.
Lee, Richard E., Goldsboro.
Meadows, W. J., Greensboro.
Utley, H. H., Benson.
Whisnant, A. M. Charlotte.

OHIO

Clarke, D. J., Toledo.
Crumrine, H. C., Cleveland.
Cummer, C. L., Cleveland.
Hitchings, F. W., Cleveland.
Prudhomme, A. J., Cleveland.
Storey, A. S., Cleveland.
Wright, Elizabeth W., Cincinnati.

OKLAHOMA

Kelleam, E. A., Grant.

PENNSYLVANIA

Allen, D. E., Altoona.
Bacon, W. D., Philadelphia.
Cohen, A. J., Philadelphia.
Egbert, W. E., Chester.
Greenewalt, J. C., Chambersburg.
Hallett, H. J., McKeesport.
Johnson, E. E., Philadelphia.
Joseph, L. D., Bradford.
Merrill, W. J., Philadelphia.
Munson, H. G., Philadelphia.
Spiess, W. G., Philadelphia.
Wagner, W. E., Philadelphia.
Weiss, Harry, Bradford.

SOUTH CAROLINA

LaBorde, Oscar, Columbia.
Monsen, M. B., Luray.
Parker, Jr., F. L., Charleston.
Wallace, W. A., Spartanburg.

TENNESSEE

Martin, G. P., Cookeville.
Thomison, J. G., Dayton.

TEXAS

Cary, G. F. S., El Paso.
Combe, F. J., Brownsville.
Combe, J. K., Brownsville.
Hunt, Preston, Texarkana.
Ricks, G. N., Pleasanton.
Smith, P. L., Houston.
Stroud, E. F., Houston.
Wier, W. M., Houston.

VIRGINIA

Coffman, W. H., Richmond.
Smith, J. E., Petersburg.
Wilkins, R. L., Alexandria.

WASHINGTON

Gallogher, P. J., Spokane.
MacLafferty, B. N., Aberdeen.
Melde, Olaf T., Spokane.
Sinks, J. R., Spokane.
Smith, R. W., Walla Walla.
Mathieu, A. L., South Bend.
Mills, J. F., Sedro-Woolley.

WEST VIRGINIA

Ridley, F. T., Bluefield.
LeFevre, E. B., Inwood.
Price, R. C., Morgantown.

Marriages

Almerin W. Baer, M.D., Chicago, to Miss Rose Berns of Peabody, Kan., August 28.

Horace Powell Conley, M.D., to Miss Mary Bond Taylor, both of Memphis, Tenn., August 28.

Albert Roy Hogg, M.D., Haralson, Ga., to Miss Gertrude Allen of College Park, Ga., August 24.

Myron E. Bennett, M.D., Chicago, to Mary M. Wheeler, M.D., of Grant Park, Ill., September 6.

John Langdon Chassell, M.D., Belle Fourche, S. D., to Miss Hines, of Rowan, Iowa, September 1.

John Brooks Kaufman, M.D., U. S. Navy, to Miss Katherine Metcalfe, at San Francisco, July 21.

Ernest Collett McKibben, M.D., to Miss Mary Rachel Rogers, both of Vashon, Wash., August 25.

Raymond E. Gaston, M.D., Cincinnati, to Miss Myrtle McCullough, of Tranquility, Ohio, August 18.

William D. Ducy, M.D., Brockton, Mass., to Miss Edna Ramsay of Bath, Maine, at Portland, June 28.

Theodore Alvin Little, M.D., Spartansburg, Pa., to Miss Euphemia Blee of Jerseytown, Pa., August 12.

Leander F. Cain, M.D., Checotah, Okla., to Mrs. Nora M. Fuller of Washington, D. C., at Rockville, Md., August 21.

Deaths

Mason F. Williams, M.D. University of Louisville (Ky.), 1876; a member of the Oklahoma State Medical Association and formerly president of the Muskogee County Medical Society; for more than 30 years a practitioner of the Indian Territory; a member of the local board of U. S. pension examining surgeons; physician to the U. S. jail; physician to Henry Kendall College, and secretary of the first U. S. Medical Examining Board for the Western District of Indian Territory; died in the Muskogee Hospital, August 15, a few hours after operation for peritonitis following rupture of the gall bladder, aged 58.

Charles T. Wilbur, M.D. Berkshire Medical College, Pittsfield, Mass., 1860; a member of the Michigan State Medical Society; assistant surgeon and surgeon of the Fifty-ninth and Ninety-fifth Ohio Volunteer Infantry during the Civil War; from 1876 to 1884 superintendent of the Illinois State Institution for the Feeble-Minded, Lincoln; superintendent and proprietor of the Wilbur Home for the Feeble-Minded, Kalamazoo, Mich.; a member of the board of trustees of the State Institution for the Feeble-Minded, Lapeer; died suddenly at his home in Kalamazoo, August 19, from cerebral embolism, aged 74.

Herman Williams Gross, M.D. University of Pennsylvania, Philadelphia, 1895; a member of the American Medical Association; lieutenant and assistant surgeon of the Sixth Massachusetts Infantry, U. S. V., during the Spanish-American War, with service in Porto Rico; in 1906 a member of the Quincy city council; surgeon to the Fore River Shipbuilding Company, Quincy, Mass.; was found dead in his quarters in the accident hospital of the company, August 24, from the effects of a gunshot wound of the head, believed to have been self-inflicted with suicidal intent, aged 37.

James Stafford, M.D. University of Vermont, Burlington, 1885; College of Physicians and Surgeons, New York City, 1886; formerly attending gynecologist to the Northern Dispensary, New York City; assistant attending gynecologist to the out-patient department of Bellevue Hospital; clinical assistant in gynecology in the New York Policlinic; assistant surgeon of the Seventy-first New York Infantry, U. S. V., and of the Fourth U. S. Infantry in Cuba; died at his home in Perth Amboy, N. J., August 3, from septicemia, aged 48.

Edwin J. Dirickson, M.D. Jefferson Medical College, Philadelphia, 1874; of Berlin, Md.; for many years a member of the Medical and Chirurgical Faculty of Maryland; formerly acting assistant surgeon P. H. and M.-H. Service; physical inspector of the U. S. Life-Saving Service for the fifth district of Maryland; health officer of Ocean City, Md.; and a member of the state legislature; died in the Sheppard and Enoch Pratt Hospital, near Towson, Md., August 27, aged 56.

Homer Bushnell, M.D. University of Michigan, Ann Arbor, 1873; of North Adams, Mass.; a member of the Massachusetts Medical Society and Medical Association of Northern Berkshire; a censor of the Berkshire District Medical Society; and for fifteen years associate medical examiner of the North Berkshire District; died at his summer home near Pownal, Vt., August 23, from cerebral hemorrhage, aged 63.

George Colburn Clement, M.D. Harvard Medical School, Boston, 1880; a member of the American Medical Association; from 1886 to 1892 city physician of Haverhill, Mass.; a member of the board of trustees of and surgeon and opthalmologist to Hale Hospital; local surgeon for the Boston and Northern Street Railway Company; died at his home, August 27, from cerebral hemorrhage, aged 54.

Thomas Simon P. Fitch, M.D. Bellevue Hospital Medical College, New York City, 1867; of Orange, N. J.; a member of the Medical Society of New Jersey; attending physician and member of the visiting staff of Orange Memorial Hospital, and consulting physician to the Orthopedic Hospital and the House of the Good Shepherd, Orange, N. J.; died in Portland, Maine, August 24, aged 64.

Samuel Madison Worthington, M.D. Hahnemann Medical College, Chicago, 1883; of Versailles, Ky.; a member of the Kentucky State Medical Association; a member of the board of directors of the Morgan Helm Memorial Library; died in the Woodford Memorial Hospital, Versailles, August 27, from tuberculosis of the larynx, aged 48.

Alexander M. F. McCollough, M.D. Jefferson Medical College, Philadelphia, 1877; of Los Angeles, Cal.; formerly of Wichita, Kan.; for four years president of the Union Savings Bank, Tacoma, Wash.; died in the Pacific Hospital, Los Angeles, August 19, from peritonitis, after an operation for gallstone disease, aged 56.

Edward Conyers Goodrich, M.D. University of Georgia, Augusta, 1873; a member and in 1900 treasurer of the Medical Association of Georgia; for six years secretary of the health department of Augusta, Ga.; a member of the local board of U. S. pension examining surgeons; died at the home of his brother in Summerville, Ga., August 12, aged 57.

Augustus Franklin Purington, M.D. Medical School of Maine, Brunswick, 1864; of Indiana, Pa.; assistant surgeon in the Army during the Civil War; a member of the Medical Society of the State of Pennsylvania; and formerly president of the Indiana County Medical Society; died at the Markleton Sanitarium, August 19, from heart disease, aged 75.

Levi Coke Stephens, M.D. Medical College of the State of South Carolina, Charleston, 1860; a member and former president of the South Carolina Medical Society and State Board of Medical Examiners; surgeon in the Confederate service during the Civil War; died suddenly at his home in Greenville, August 12, aged 71.

Elmer D. North, M.D. Detroit (Mich.) Medical College, 1881; a veteran of the Civil War; in 1871, superintendent of schools of Ingham county, Mich., and for twenty-one years a member of the local board of U. S. pension examining surgeons; was found dead in his apartment in Lansing, Mich., August 17, from angina pectoris, aged 68.

James M. Borglum, M.D. Homeopathic Medical College of Missouri, St. Louis, 1874; a member of the American Medical Association; for 34 years a practitioner of Omaha; died in his apartments in that city, August 29, from cerebral hemorrhage, five days after a runaway accident, aged 70.

William J. Jones, M.D. New York University, New York City, 1858; a member of the American Medical Association; an honorary fellow and once vice-president of the Medical Society of the State of North Carolina; died at his home in Goldsboro, June 27, aged 71.

Benjamin Ellis Martin, M.D. College of Physicians and Surgeons, New York City, 1861; assistant surgeon of Duryea's Zouaves in the Civil War, and later a member of the Agassiz expedition to South Africa; died at his home in New York City, August 19, aged 70.

Henry Sargent Knight, M.D. Jefferson Medical College, Philadelphia, 1878; a member of the Massachusetts Medical Society; and a member of the school committee of Worcester for many years; died at his home, August 22, from cerebral hemorrhage, aged 50.

Philo William Street, M.D. University of Vermont, Burlington, 1892; formerly a member of the American Medical Association; health officer of Suffield, Conn., and chairman of the school board; died at his home, August 27, from acute nephritis, aged 43.

George Reid (license, Mich., years of practice, 1900); formerly a member of the American Medical Association; for 36 years a practitioner of Reese, Mich.; died recently, at his home in that place from the result of a fall, and was buried August 21.

Zenas Sanford Loftis, M.D. Vanderbilt University, Nashville, 1908; formerly president of the Nashville Student Volunteer Movement; and a missionary at Batang, West China; died from smallpox soon after his arrival at his post of duty, aged 24.

Stella Hager-Colver, M.D. Woman's Medical College of Pennsylvania, Philadelphia, 1901; formerly of Philadelphia; a member of the Medical Society of the State of Pennsylvania; died in Dallas, Texas, August 20, from heart disease, after a long illness.

William H. Wells, M.D. Rush Medical College, Chicago, 1848; who went to California in 1849, and afterward practiced in Sacramento, Santa Clara, Solano and Fresno counties; died at the home of his daughter in Sacramento, August 15, aged 91.

William Palmer Wesselhoeft, M.D. Harvard Medical School, Boston, 1857; of Boston; once president of the International Hahnemannian Association; died at his summer home, York Harbor, Maine, August 24, from senile debility, aged 73.

Rhesa W. Read, M.D. University of Pennsylvania, Philadelphia, 1858; major and surgeon in the Confederate service during the Civil War; city physician and health officer of Texarkana, Ark.; died at his home in that city, August 3.

Byron S. Knapp, M.D. Cincinnati College of Medicine and Surgery, 1874; for fifteen years a member of the Owosso (Mich.) Board of Education; died at his home in Owosso, August 20, from cerebral hemorrhage, aged 64.

Jabez Parkhurst Bloss, M.D. College of Physicians and Surgeons, New York City, 1853; for two terms demonstrator of anatomy in the Woodstock (Vt.) Medical College; died at his home in Troy, N. Y., August 26, aged 82.

Frank Eugene Greene, M.D. Eclectic Medical Institute, Cincinnati, 1875; a member and secretary of the New England Society of Specialists; of Roxbury, Boston; died at his summer home in Swampscott, Mass., August 25.

John Emmett Burns, M.D. University of Wooster, Cleveland, 1874; for five years a member of the house staff of Charity Hospital, Cleveland; died at his home in that city, August 18, from heart disease, aged 58.

Robert Walker Robinson, M.D. Long Island College Hospital, Brooklyn, N. Y., 1884; of Auburn, N. Y.; a member of the American Medical Association; died at his summer home in Northport, Maine, August 20, aged 49.

Hamlet Sharp Garland, M.D. Kentucky University, Louisville, 1904; a member of the American Medical Association; died at his home in Oskaloosa, Iowa, August 27, from peritonitis following appendicitis, aged 26.

Samuel M. Plush, M.D. Penn Medical University, Philadelphia, 1876; a veteran of the Civil War, a pioneer in electrical development; died at his home in Arcola, near Pottstown, Pa., May 3, from dropsy, aged 69.

Charles E. L. McCauley, M.D. University of Pennsylvania, Philadelphia, 1853; one of the oldest practitioners of Montgomery county, Tenn.; died at his home in Clarksville, August 14, from senile debility, aged 79.

James William Rochelle, M.D. Kentucky School of Medicine, Louisville, 1893; a member of the State Medical Association of Texas; died at his home in Hooks, August 14, from diabetes and heart disease, aged 56.

Ezekiel Dawson, M.D. University of Pennsylvania, Philadelphia, 1853; surgeon of the Third Delaware Volunteer Infantry during the Civil War; died at his home in Baltimore, June 27, from senile debility, aged 78.

James Milton Carlton, M.D. Medical College of Georgia, Augusta, 1886; a member of the Medical Society of the State of South Carolina; died at his home in Mount Carmel, August 15, from angina pectoris, aged 48.

Allen De Turk Hunter, M.D. Jefferson Medical College, Philadelphia, 1884; a member of the Illinois State Medical Society; died at his home in Savanna, Ill., August 18, after an operation for peritonitis, aged 46.

Louis Feigenblatt, M.D. New York University, New York City, 1872; a member of the Medical Society of the State of New York; died at his home in New York City, May 13, from chronic nephritis, aged 71.

Lewis F. Layton, M.D. Tulane University, New Orleans, 1887; a member of the State Medical Association of Texas; health officer of Cameron county and Brownsville, Texas; died at his home, August 25.

Myron A. Shaw, M.D. Rush Medical College, Chicago, 1883; a veteran of the Civil War; for many years a justice of the peace of Durand, Wis.; died at his home, August 24, from heart disease, aged 72.

William Francis Swalm, M.D. College of Physicians and Surgeons, New York City, 1859; of Brooklyn, N. Y.; a veteran of the Civil War; died at Shelter Island Heights, Long Island, August 26, aged 73.

Henry T. Hunter, M.D. University of Pennsylvania, Philadelphia, 1861; for many years a member of the Medical Society of Virginia; died at his home in Norfolk, Va., August 5, aged 69.

James O. Ackerman, M.D. Hahnemann Medical College, Chicago, 1877; a veteran of the Civil War; died at his home in Fond du Lac, Wis., August 25, from disease of the stomach, aged 67.

James Irving Chapin, M.D. University of Pennsylvania, Philadelphia, 1903; of Philadelphia; died in a hotel in New Orleans, August 24, from the effects of an overdose of morphin, aged 30.

Daniel L. Sweeney, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1882; a member of the Essex County (N. J.) Medical Society; died at his home in Newark, August 20, aged 61.

Louis A. Whitehouse, M.D. Bellevue Hospital Medical College, New York City, 1891; of Brooklyn, N. Y.; died suddenly at the Hotel Garde, New Haven, Conn., August 18, from heart disease.

Charles A. Ball, M.D. George Washington University, Washington, D. C., 1877; a member of the American Medical Association; died at his home in Washington, September 3, aged 58.

Robert Field, M.D. Tulane University, New Orleans, 1868; a Confederate veteran; formerly of Pocahontas, Miss.; died at his home in Hattiesburg, Miss., March 17, from influenza.

J. W. Etheridge, for many years a practitioner of Crystal Springs, Miss.; died at his country home, near that place, January 13, from locomotor ataxia, aged 69.

George A. Martin, M.D. Medical College of Ohio, Cincinnati, 1877; a veteran of the Civil War; died at his home in Brownstown, Ill., August 28, from nephritis, aged 64.

Lewis Harvey Jones, M.D. Barnes Medical College, St. Louis, 1894; died at his home in Ellenboro, W. Va., August 25, from the effects of an accidental overdose of morphin.

John Aloysius Allendorf, M.D. Harvard Medical School, Boston, 1903; of Charlestown, Mass.; died in Carney Hospital, Boston, August 24, from edema of the brain.

Charles Alexander Garnsey (license, Ill., years of practice, 1878); for 65 years a practitioner; died at his home in Batavia, Ill., August 19, aged 95.

John W. Rasmussen, M.D. Marquette University, Milwaukee, Wis., 1898; died at his home in West Allis, Wis., August 27, from acute gastroenteritis, aged 37.

Eleanor Handmacher, M.D. Cleveland Homeopathic Medical College, 1909; of Cleveland; died at St. Alexis' Hospital in that city, August 25, aged 23.

David Sullivan Stevenson, M.D. Lincoln (Neb.) Medical College, 1899; died at his home in Auburn, Neb., July 3, from cancer of the neck, aged 36.

Cyrus Francis Krauser, M.D. Long Island College Hospital, Brooklyn, 1865; formerly of Philadelphia; died in Brooklyn, N. Y., July 9, aged 76.

William S. Cockrell, M.D. University of Maryland, Baltimore, 1879; died at his home near Harper's Ferry, W. Va., August 27, aged 65.

Peter Walter Emmens, M.D. Eclectic Medical Institute, Cincinnati, 1876 of Syracuse, N. Y.; died in Binghamton, N. Y., August 22, aged 78.

C. H. Davidson (license, Utah, years of practice, 1894); died at his home in Brigham, June 12, from carcinoma of the stomach, aged 80.

Roy St. Clair, M.D. Willoughby (Ohio) Medical College, 1858; of Bloomfield, Iowa; died near Humeston, Iowa, July 23, aged 72.

William T. Thurman, M.D. Missouri Medical College, St. Louis, 1885; died at his home in Detroit, Ill., August 25, from nephritis.

John Walker Neil, M.D. Starling Medical College, Columbus, Ohio, 1859; died at his home in Delaware, Ohio, August 4, aged 74.

William Littlewood (license, Mo.); died at his home in Albany, Mo., August 12, from heart disease, aged 64.

Knud L. Boysen, M.D. Kiel, Germany, 1863; died at his home in Chicago, August 25, from nephritis.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phœnix, October 4-5. Sec., Dr. Ancil Martin.

COLORADO: Capitol, Denver, October 5. Sec., Dr. S. D. VanMeter, 1723 Tremont St.

GEORGIA: Regular, Capitol Bldg., Atlanta, October 12. Sec., Dr. E. R. Anthony, Griffin. Homeopathic: Atlanta, October 4. Sec., Dr. R. E. Hinman, 153 Whitehall St.

IDAHO: Boise, October 5-6. Sec., Dr. W. F. Howard, Pocatello.

ILLINOIS: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.

IOWA: State House, Des Moines, September 21-23. Sec., Dr. Louis A. Thomas.

KANSAS: Topeka, October 12. Sec., Dr. F. P. Hatfield, Olathe.

LOUISIANA: New Orleans, October 1-2. Sec., Dr. Felix A. Larue, 211 Camp St.

MASSACHUSETTS: State House, Boston, September 14-16. Sec., Dr. Edwin B. Harvey.

MICHIGAN: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: State University, October 5. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.

MISSISSIPPI: Jackson, October 12. Sec., Dr. S. H. McLean.

MISSOURI: Kansas City, September 20-22. Sec., Dr. J. A. B. Adcock, Warrensburg.

MONTANA: Capitol, Helena, October 5. Sec., Dr. W. C. Riddell.

NEW JERSEY: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.

NEW YORK: Albany, September 21-24. Chief of Examinations Division, Charles F. Wheelock, Albany.

NORTH DAKOTA: Grand Forks, Oct. 5-7. Sec., Dr. H. M. Wheeler.

OKLAHOMA: Ione Hotel, Guthrie, October 13. Sec., Dr. Frank P. Davis, Enid.

RHODE ISLAND: Room 313, State House, Providence, October 7-8. Sec., Dr. Gardner T. Swarts.

UTAH: Room 207, City and County Bldg., Salt Lake City, October 4-5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.

WYOMING: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Preliminary Education and the College Entrance Examining Board

As has been already stated (THE JOURNAL, Aug. 14, 1909, p. 580), no part of the published standards of colleges and state examining boards has been so badly enforced as that relating to preliminary education, chiefly on account of the endless variety of secondary schools and the extreme difficulty of placing the proper value on entrance credentials. When the student has a diploma from a high school the difficulty is not so great since most universities have lists of "accredited" schools and therefore the standing of the high school can be learned. The difficulty arises when the student presents credentials for a year here, a year there and a year somewhere else, with no diploma from anywhere. This is an instance with no end of variation. The difficult question is: "Has the applicant the equivalent of a four-year high-school education?" State boards are trying to deal with the problem and college deans are struggling with it, but, in spite of all, many deplorably weak and badly prepared students are annually admitted to our medical schools.

What we need to-day more than anything else, is an honest, intelligent enforcement of preliminary requirements. One way to bring this about would be to abolish the "equivalents." When the student has a diploma from a high school which is really accredited by a standard university, admit him. If he doesn't have such a diploma require an examination. Who shall conduct the examination, the college, the state board, a high-school teacher, a state superintendent of public instruction, or some one else? All these plans are in vogue now, resulting in an endless variety and confusion of tests from the signing of certificates in blank or the asking of a few oral questions up to a thorough examination which doubtless really does insure that the applicant has the equivalent of a four-year high-school education.

But why go to all this needless bother and permit this confusion when we have at our very doors a board of entrance examiners, the members of which are chosen because of their skill in deciding the fitness of those who are to enter colleges and universities. A passing mark from the college entrance examining board could be relied on as the best evidence that the student really has the equivalent of the high school education. Why should not all those who do not hold diplomas be referred to this board for examination? That procedure would do away at once with all suspicion of graft, fraud or error and insure that our four-year high-school standard was being strictly adhered to. Any medical school which should insist that all its entrance examinations be conducted by that board would at once place itself above the suspicion of permitting a feeble enforcement of its preliminary standards for the sake of obtaining more students.

That the college entrance examining board furnishes a possible solution to the problem is evidenced by the fact that it already holds entrance examinations for twenty-seven colleges and universities, eight of which have medical departments. Its functions might, with little difficulty, be extended to other colleges and medical schools, since in June, 1908, entrance examinations were held in 165 different cities, in 41 different states, and altogether 3,250 candidates were examined.

But whether that board be chosen to conduct entrance examinations or not, the fact remains that medical education should be lifted above the suspicion of purposely adhering to low standards for the sake of securing fees from a few more students. If any college can not honestly enforce its standards for admission and continue to exist then it should at least die an honorable death.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

The Public Health Movement in Kentucky

The August issue of the *Kentucky Medical Journal* is a Public Health Number and is devoted largely to a discussion of public health matters in Kentucky. It is not only a marked innovation but is also an example to other state society journals of what can be done to awaken interest both in the profession and the public and to inaugurate a sweeping and practical reform along public health lines. The reason for the appearance of the Public Health Number at this time is the work recently completed in Kentucky by Mrs. Caroline B. Crane, who came to Kentucky on the invitation of and under the auspices of the State Federation of Women's Clubs, the public health officers and the medical profession. An introductory editorial says:

"At the request of the State Board of Health, this is made the health number of the *Journal* and is devoted largely to reports made by Mrs. Crane, giving the results of inspections of the various towns and cities visited by her and her final report on 'The Sanitary Condition and Needs of Kentucky.' . . . It is a matter of regret . . . that Mrs. Crane could not be sent to every county in Kentucky. As this could not be done, twelve cities and towns were carefully selected, representing as far as possible every type as to population, water-supply, drainage, dairies, slaughter-houses and other conditions affecting health and life. As some of these conditions she describes and criticizes have their counterpart in every community, rural and urban, health boards, civic leagues and similar organizations can easily utilize them in working out their own problems."

Regarding the results of her work in Kentucky, the *Journal* says:

"Within less than twenty-four hours after her closing meeting in Louisville, the county judge had inspected and condemned the almshouse, and the fiscal court, called in special session for that purpose, had made a generous appropriation for alterations. Prominent laymen called a meeting the following week at Frankfort to organize and inaugurate the reforms suggested by her. There was such a popular demand for dairy reforms and healthy cows that the State Board of Health was enabled to issue a sweeping proclamation providing for the tuberculin test and for improvement in the physical condition of dairies and the handling of milk, and it is hoped that trained settlement workers and nurses will soon be employed in the larger cities and towns to instruct mothers and others in the care and feeding of children and invalids."

The *Journal* also quotes editorially from Mr. Desha Breckenridge, who says in the *Lexington Herald:*

"Irrespective of party every citizen ought to rejoice in any course which will improve the public service and make better conditions in public institutions. Our whole system in Kentucky is rotten. We doubt if there are twenty out of the one hundred and nineteen counties in Kentucky in which the jail is fit for the habitation of hogs much less than human beings. . . . The great majority of our poorhouses are a disgrace to civilization. . . . We are just awakening in Kentucky to the need for the observation of the laws of sanitation, just beginning to understand that there is no higher province of government than care for the health of the citizens. . . . The greatest value from such visits as Mrs. Crane's is the rousing of public conscience, the exciting of the public interest, the increase in the desire of citizens to know conditions in every part of the city in which they live and in every institution supported by the taxes which they pay."

Forty-three pages are devoted to an extended report of the sanitary condition and needs of Kentucky, in which Mrs. Crane summarizes the results of her investigations. The statements made are in each case based on personal observation and knowledge of the facts. In addition, copies of the reports were sent to the State Board of Health, State Pure Food Commission, and the State Federation of Women's Clubs.

A copy of the report on each city was given to the local board of health; and in most instances this report was published in the local papers. After as careful investigation of the sanitary condition and needs of each of the twelve cities as was possible under the circumstances, Mrs. Crane addressed an audience of citizens of the city, setting forth the result of her investigation and making suggestions and recommendations as to the improvement of local conditions. General sanitary conditions in the state were first discussed under the heads of water-supply, sewage and drainage, street sanitation, markets, meat inspection, milk inspection and dairies, school sanitation, tuberculosis, housing conditions, almshouses, jails, workhouses and boards of health, this discussion being followed by special reports on each city visited. Of the twelve cities in question, only five have undertaken any solution of the problem of furnishing pure drinking-water for their citizens. In the other seven, untreated river-water containing the sewage of cities farther up the river is supplied to the citizens by the municipality. These seven cites, although they in the main defend the purity of their water-supply, are seldom free from typhoid fever; yet it is only when there is a violent outbreak and increase in the number of cases that purification of the water-supply is seriously discussed. Mrs. Crane holds that the only solution of the water problem is to furnish pure water, accessible and plentiful to the humblest family, and that a study of vital statistics in the cities which have a pure water-supply should convince any one of the wisdom and economy of this measure. This question is of special interest to women as it affects every household.

Regarding sewerage and drainage, Mrs. Crane states that in almost every one of the cities visited some beautiful creek or river has been transformed into an offensive open sewer by the discharge of the city's sewage into it, making it, especially during the drought of summer, a serious menace to health. Good sewers are worth much more than good roads and each city should, if necessary, issue bonds in order to secure a proper sewage and water-supply system.

Street sanitation and the collection of garbage are very carefully considered in Mrs. Crane's report, and the cremation of all waste is strongly advised. Regarding markets, Mrs. Crane suggests the frequent visitation of committees of good housekeepers into the back rooms and hidden places whence the food supply issues as a remedy for the frightful uncleanliness found in many of these places. Regarding the meat inspection, most of the cities visited seem to be aware of the importance of a clean and wholesome meat supply, but in only a few of them was a sufficient money appropriation made to permit of meat inspection being properly carried on. Special stress is laid on the importance of rigid inspection of dairies, sources of milk-supply and the attention of women's clubs is particularly called to this most important matter. School sanitation, including the consideration of school houses, ventilation, heating and lighting, water-supply and toilet facilities is carefully considered. In this connection Mrs. Crane pertinently remarks:

"Let us remember always that the aim of schools should be to teach children how to live. If we can teach cleanliness and propriety and the use of fresh air, we shall do something worth while. Let us not teach them in the physiology lesson and give the lie to them in the basement."

In discussing housing conditions, Mrs. Crane states that there are in Kentucky, especially in Louisville, Lexington and Frankfort, tenement houses and hovels absolutely unfit for habitation, conditions in Frankfort, the state capital, being by far the worst. Careful consideration is given to county almshouses, in which the inmates were found in many cases to be objects of peculiar neglect, being left almost entirely to their own resources amid surroundings of discomfort, filth and pitiable neglect. Detailed comments of her visits to these reveal almost unbelievable conditions, while the jails are described as medieval types of architecture, unfit places in which to house human beings for any prolonged period. When to the darkness and gloom is added untidiness and filth, these places become hotbeds of disease and contagion as well as schools of crime. Workhouses, local boards of health and state institutions are also carefully considered.

It is impossible to give the details of Mrs. Crane's inspection of the twelve cities visited, but the special reports on these twelve cities should be carefully read by every one interested in public health conditions and problems. These twelve Kentucky cities are probably fair samples of cities of the same size and conditions in other states and, without doubt, an equally careful inspection would reveal as bad or worse conditions in any of our towns and cities. If any county medical society is at a loss to know how to awaken interest in the medical profession of the county and how to secure the cooperation and support of the public, let it take up systematically the inspection of the towns and cities within its boundaries, investigating the sources of water, food and milk-supplies, the manner and effectiveness of sewage and garbage disposal and the condition and management of public institutions, including jails, workhouses, poorhouses, etc. It is safe to say that any county society which will devote two weeks to a careful effort to learn the exact conditons existing along these lines will find that it has discovered all the work which it can possibly do for several years to come, and has brought its energies and activities to bear on questions which are of vital interest to the community.

The best proof of the fact that the times are ripe for such work is the reception given Mrs. Crane by the public press of Kentucky and the large audiences which greeted her everywhere after the nature of her work was understood. Space does not permit of extended quotations, but the following is typical. The Cynthiana *Log Cabin*, commenting on Mrs. Crane's visit, says:

"Cynthiana is having an awakening on the subject of sanitation and it may be that increased diligence on the part of our people may avert an epidemic such as our neighboring city of Georgetown has just experienced. Business was to an extent paralyzed and many lives lost by the recent epidemic of typhoid fever, which was due to contaminated water-supply and filthy premises in some sections of the town. . . . Many people think the Chinese are working backward when they employ doctors by the year to keep them well, but are they? Harrison county and Cynthiana combined spends $300 per year for health officers to avert epidemics while the people themselves pay the doctors $30,000 to $50,000 to treat their diseases. Our people are slowly but surely learning the inestimable value of proper sanitary precautions and cleanliness which will save much sickness in years to come."

The work of Mrs. Crane and of the *Kentucky Medical Journal* has aroused an unprecedented interest in public health matters in Kentucky which will be productive of marked and lasting benefit to all her citizens. The lesson to medical socities is to take up the work that lies nearest at hand and to preach the gospel of modern cleanliness and right living. It has been said that personal cleanliness is a discovery of the last century. Civic cleanliness seems to be a discovery of the last decade. Present conditions offer a wonderful opportunity to the medical profession to lead the way in the campaign for sanitary reform. If we fail to do our duty it will be taken up by others. If we embrace the opportunity the debt of the public to the medical profession, as well as our influence with the people, will be greatly increased.

The question of the proper activities for county and state medical organizations has been much discussed in the past few years which have witnessed such an enormous increase in medical organizations and in the interest displayed in them. In many cases county societies, after preliminary organization work was completed, have apparently been at a loss to know in what direction to turn their energies. A number of county societies, recognizing the constantly growing importance of preventive medicine and the duties of the medical profession to the public in this respect, have taken up some special line of work connected with municipal or county sanitation. This tendency has not been as marked as the importance of the subject demands, but it is an encouraging sign of the possibilities of the future. The work done in Kentucky as set forth in the *Kentucky Journal* may well be taken as a model by our other state associations and state journals. No county can feel that its duty is done so long as sanitary conditions in the county remain uninvestigated and unimproved. In no way will medical societies so clearly demonstrate their reason for existence or so readily secure the support and confidence of the people.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

Third Year—First Month, Second Weekly Meeting

Surgery of Chest Wall

Contusions of Thorax: Local symptoms; association of fracture of rib, rupture of lung, pleura or diaphragm. General symptoms; relation of shock to portion of chest injured. Sequelæ, their dependence on viscera injured

Non-Penetrating Injuries of Thorax: Varying character of wounds. Indications in treatment; shock, fractures, hemorrhage, infection.

Penetrating Injuries of Thorax: Character of external wounds. Symptoms; dependence on location and severity of injury; shock, dyspnea, pain, cough. Physical examination, injury to pleura or lung, pleuritic exudate. Prognosis, in fractures, hemorrhage, injury to lung, in gunshot wounds.

Tumors of Chest-Wall: Benign tumors; lipoma, fibroma molluscum, angiomata, keloid, osteoma and chondroma. Malignant tumors; sarcoma and carcinoma, primary or secondary.

Osteomyelitis of Ribs and Sternum: Varieties, septic, typhoid, tuberculous, syphilitic. Differential diagnosis and treatment of tuberculous and syphilitic varieties.

Book Notices

SURGERY OF THE [illegible] In Two Volumes. By John B. Deaver, M.D., LL [illegible] erman Hospital, [illegible], M.D., Surgeon [illegible] Hospital, Phila- [illegible] odenum. Cloth. Pp. 468, with illust [illegible]: P. Blakiston's Son & Co., 1909.

The first 30 pages of this volume are devoted to the topographic anatomy of the stomach and duodenum. The latest views concerning the relations of the viscera in question are given, but we regret that more attention has not been given to a discussion of the duodenojejunal angle. Almost twenty years ago Jonnesco described the anatomy of this angle accurately. Surgeons seem to have overlooked this work almost entirely, and are just beginning to realize that the beginning of the jejunum in about 20 per cent. of the cases passes downward and to the right, while in the remaining 80 per cent. it passes downward and to the left. These two forms are associated with definite fossæ, indicating that the direction of the jejunum in the two cases is anatomic. Jonnesco's work should be reviewed, as it has apparently been forgotten by surgeons. Twenty-five pages are devoted to physiology, in which are embodied the latest views concerning secretin and the interaction of intestinal juices. The chapters devoted to gastric ulcer and carcinoma are worthy of much consideration and will receive general approval.

The statements made concerning the treatment of pyloric stenosis in infants on pages 138, 139 and 140 will be disputed by many. Medical treatment will undoubtedly cure in a spasmodic case, but there is a type which medical treatment will not influence. Delay even of a few days in cases of this type increases the mortality. The large number of deaths in cases of this type is due to the fact that the operation has been performed as a last resort when the patient was in a critical condition. While it may seem "inherently wrong to start children off on what it is hoped may be a long life with their gastrointestinal tract so distorted as it is after even the most skilfully executed gastrojejunostomy," the fact remains that this operation performed in time relieves the condition most rapidly and with the greatest percentage of cures, and in most cases is the only operation that can be attempted with any guarantee of permanent cure with safety.

On page 382 is discussed the position of the primary loop of the jejunum. As previously mentioned Jonnesco described several years ago a number of cases in which this loop of the intestine ran in the inferior layer of the transverse mesocolon, being turned downward and to the right in this way. This relation occurs about as frequently as that described by Mayo, in which there is a mesocolic band. It is still a question whether the division of the band as described by Mayo is not an unessential refinement of technic.

The book is beautifully written and is systematically arranged. The facts concerning the surgery of the stomach and duodenum as they exist at the present time are clearly given. One of the most valuable features of this book is a carefully selected bibliography. It is a volume which both the physician and surgeon should have as a reference book.

SLEEPING SICKNESS BUREAU. Bulletin No. 3. January, 1909. Paper. Pp. 128. London: Sleeping Sickness-Bureau, Royal Society, Burlington House, W., 1909.

This bulletin summarizes the rational prophylaxis against sleeping sickness so far as it is known at this time. A large part of the bulletin is taken up with a consideration of the life history, habits and distribution of the tsetse fly, *Glossina palpalis.* This, of course, is of prime importance, for effective prophylaxis depends to a large degree on a reduction in the number of flies, and on avoidance of localities infected by them. The propagation, the relation of the fly to season, altitude, sun and shade, temperature and humidity, its food supply, enemies and diseases, range of flight, and particularly its close association with bodies of water are discussed.

Methods of prophylaxis are classified under four heads.

1. Attacking the fly in its haunts. The natural abode of the fly is in the brush on the banks of streams or other bodies of water, and here it propagates. It is said that clearing a strip thirty yards wide along the bank of a stream will banish the fly from the strip and also from the country which lies behind it. Pools should be drained or filled, plants noxious to the flies, and animals (birds) which feed on them, should be introduced.

2. The removal of healthy persons from the vicinity of the fly, or their protection from fly-bites. A. Villages or markets should be removed to fly-free areas. B. Occupations carried on in fly areas should be discouraged or forbidden. C. Fly areas should be avoided in the heat of the day, when the flies are most active. D. Roads should be selected which do not traverse fly areas. E. Protection should be afforded by the wearing of suitable clothes, by wire gauze, etc. F. Volatile oily substances should be used to keep off the fly. G. natives should be instructed.

3. The prevention of access of trypanosome-carriers, i. e., infected persons, to fly areas. A. The sick should be segregated away from the fly. B. The moving of persons from infected to uninfected districts, when these contain fly areas, should be prohibited. C. The passage of persons harboring trypanosomes from one infected district to another should be prohibited.

4. Treatment of infected persons, by one of the trypanocidal agents, as sodium aminophenyl arsenate (atoxyl) in order that the peripheral blood may be freed from parasites. In this way the infection of flies may be prevented to some degree.

From this presentation one gains an idea of the herculean task which confronts the colonizers of tropical Africa in their campaign against sleeping sickness.

HANDBOOK OF OBSTETRICS. By R. Cadwallader, A.M., M.D., Assistant in Obstetrics, University of California, Medical Department, San Francisco. Cloth. Pp. 370, with illustrations. Price, $2. Philadelphia: F. A. Davis Co., 1908.

The handbook has advantages over the text-book that probably will be recognized more and more. By the use of thinner paper, slightly smaller type, and thin, somewhat flexible, covers, it is possible to give nearly as much of practical value in 370 pages at the moderate price of $2 as is contained in the ordinary text-book of 600 to 800 pages in a book weighing and costing two or three times as much. Dr. Cadwallader says that he has endeavored to eliminate all possible extraneous matter and to condense into a small volume the essential facts of obstetrics; at the same time he could not resist the temptation to give personal opinions and experiences. In general he has succeeded in his object, but certain blemishes detract from the worth of a book we would otherwise gladly commend.

One of the most obvious defects of the book is the confusion in arrangement of subjects. In the chapter on "Physiologic Puerperium-Fetal" are described asphyxiation of the child, death of the fetus, monstrosities, injuries at birth, umbilical hemorrhage, etc. Inflammation of the decidua is described under "Pathology of Gestation—Fetal." "The Pathology of Pregnancy—Toxemias" is described in Chapter 26, while "Pathology of Gestation—Maternal" is the subject of Chapter 14. The discussion of sepsis is separated by a number of chapters from the pathology of the puerperium.

A number of grammatical errors also show hasty or careless preparation. For example, on page 7 one reads: "Because of the better development of the right side of the body, the right side of the pelvis is often slightly so;" on page 133: "The doctor should call twice daily at first, and as nearly as possible to the minute, for they often worry if he is late." On page 18 "molimina" is misspelled; on page 135 we find the curious plural form "sini," and on page 149 the equally curious "amnia." On page 87 we find the name "Skutsch" misspelled, and on page 108 a mistake in the name "Schultze."

Certain colloquial and facetious phrases are hardly suitable in a scientific book; a few examples of these blemishes may be noted. Reference, in the last paragraph of page 22, to the emotional life of a woman during the obstetrical years, should be omitted; also the advice concerning coitus on page 29: "It should be rare, not as a matter of routine like saying one's prayers or t. i. d." On page 104, speaking of sleep as a dangerous symptom toward the end of labor, Dr. Cadwallader remarks, "I much prefer to hear her swear." Likewise the description of the obstetrical cry on page 104, and the description of the mother's joy on hearing her first-born's cry sound rather out of place. The same can be said of the remark concerning the condition of a patient during the first stage of labor: "'One old hen' remarked to me that at such times she could neither 'lay nor set.'" The remarks on the failure of clergymen to warn their congregations concerning the dangers of criminal abortions would better be omitted, as well as the advice, on page 150, to the physician concerning the management of monstrosities.

Similar evidence of insufficient care in correcting the manuscript or in revising the text appears in some of the scientific statements and rules of treatment. The definition of eutocia on page 99 giving twelve hours as the limit of normal labor and twenty minutes as the length of the third stage is an example; likewise the statement on page 100 that the L. O. A. position occurs in 97 per cent. of all births. On page 112 premature rupture of the membrane is confused with "dry labor." On page 117, discussing the third stage of labor, the singular statement is made that "after half an hour there is danger of the os contracting enough to hold up the placenta like a button in a buttonhole, and it is better to go up and pull down one edge." Speaking of the puerperium, we find: "If it [the baby] cries up will go her temperature and pulse;" on page 144: "Male children should have the foreskin worked back daily and kept from adherence to the glands. . . . In females, the hood of the clitoris should be likewise treated." The following statement, found on page 288, hardly agrees with the average experience: "The use of chloroform (for forceps operation) is not needed except when the woman is very hysterical. It is far better not to use it. There is no pain and this assurance will generally suffice."

It is to be regretted that an author who is evidently a well-informed and interesting teacher should allow inconsiderate statements to disfigure a book that might have been a valuable addition to our obstetric literature.

The Body at Work. By Alex. Hill, M.A., M.D., F.R.C.S., Sometime Master of Downing College, Cambridge. Cloth. Pp. 448, with illustrations. Price, $4.50. New York: Longmans, Green & Co.

This book is not intended for the medical or scientific student but for the amateur. It is therefore written in untechnical language and, although it does not avoid the debatable fields of the subject, it makes no attempt to present the full evidence in any case, and gives only so much of the line of argument as is necessary to an understanding of the conclusion. Mr. Hill forestalls criticism on this score by saying: "If my treatment of vexed questions is unjustifiably dogmatic, this will, I trust, be attributed to the desire to present a definite picture, and not to forgetfulness of considerations which seem to call for qualified statements." He has succeeded in presenting a definite and an interesting picture of the phenomena of life; and, while possessed of considerable mastery over apt phrases and homely, enlightening comparisons, he does not seem to be carried away by his own facility for phrase-making. It is perhaps an excess of scruples against taxing the capacity or patience of the average reader that has led him to omit, "save in a few classical instances," the names of all authorities. While of course elaborate or exhaustive references to authorities would have been out of place in a popular book, we believe that a little more freedom in the citation of the names which are associated with the most important discoveries in physiology would have been of interest as well as of value, even to the unscientific reader.

Manual of Therapeutics. *Referring especially to the Products of the Pharmaceutical and Biological Laboratories of Parke, Davis & Co.* Limp Leather. Pp. 643. For free distribution to physicians, on request. Detroit, 1909.

This is a rather pretentious book for gratuitous distribution. In one way it may be said to be an extended price-list with the prices left off; that is, it is an alphabetical list of the materia medica, itemizing all the forms and combinations in which the various drugs are available. In addition, however, are almost 100 pages of valuable information, such as tables of measures and equivalents, an obstetric calendar, eruptive fever table, food percentages, diet tables, lists of poisons and antidotes, synonyms, a vocabulary of medical Latin, classification of remedies according to physiologic action and classification of remedies by diseases for which they are indicated. These help to make the manual practical and worthy of constant use.

A System of Diet and Dietetics. Edited by G. A. Sutherland, M.D., F.R.C.P. Cloth. Pp. 893. Price, $10.50. New York: Oxford University Press.

The Oxford medical publications have achieved an enviable reputation which this addition to it well sustains. Each of the nineteen contributors to the "system" is responsible for his own department, and, as the editor says, each was asked to give his "own views and experiences rather than to make a collection of all the views of different authorities." Thus the views and methods of practice of these men is given in a way that is very valuable to the practitioner. Unlike many works on dietetics, the book is free from "freak" views and fads, a sane and conservative tone dominating the whole work. This characteristic is nowhere more evident than in the chapter on "Alcohol in Health and Disease," by Dr. Harry Campbell. The least satisfactory chapter in the book is that by J. Rose Bradford, who discusses "Diet in Diabetes" in less than eleven pages. Not only is this subject dealt with in an abbreviated manner which, considering its importance, is entirely unwarranted, but several important points are not touched on at all. For instance, the need of regulating the quantity as well as the kind of food in treating diabetics, is entirely ignored. In an excellent chapter on the treatment of obesity, various fake remedies are shown up and their composition given. Most of these are of British origin and the American physician will be surprised to read in regard to these proprietary fakes that "fortunately thyroid extract is not used, its dangers are too great for even the most reckless advertiser." Evidently Dr. Edmund Cautley, who writes thus, is not familiar with the ways of the American nostrum vendor or he would know that the most widely sold "obesity cures" in this country depend for their action on thyroid extract. The chapters on "The Feeding of Infants and Children in Health" and on "Diet in the Diseases of Children" are by the editor of the "system," Dr. G. A. Sutherland, and both are excellent. The work is one that every physician who realizes the importance of diet in health and disease—and there are few modern physicians who do not—will do well to add to his library. Although this is a large, 900-page book, the light-weight but opaque, unglazed paper makes it easy to handle, while the clear type and widely spaced lines make reading a pleasure.

The Practical Medicine Series. Edited by Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. I. General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School. Cloth. Pp. 403, with illustrations. Price, $1.50. Series 1909. Chicago: The Year-Book Publishers.

This is the first of the ten volumes of the series for the present year and is also the first of the two sections that appears on the subject of general medicine. It contains a carefully selected summary of the literature of the preceding year on the diseases of the respiratory and circulatory organs, diseases of the ductless glands, metabolic diseases, and diseases of the kidneys. This volume, in common with the rest of the series, is written primarily for the benefit of the general practitioner and the arrangement and the selection of the subjects adapt it to this purpose. The sections devoted to tuberculosis and diseases of the heart, respectively, deserve especial notice. The book is well illustrated and contains complete indexes, both of subjects and of authors. The volume should prove of more than ordinary interest and value to those physicians who are careful to keep in touch with newer methods of treatment and the more exact methods of diagnosis.

Rudiments of Latin. With Special Reference to the Nomen-
clature of the U. S. Pharmacopeia, ti and
the Text-Books in Materia Medica ar also
Prescription Writing and Notes on th Ger-
man Pharmacopeia. By Julius Willi ofes-
sor of Pharmacy, Purdue University, Pp.
92. Price, $1. Published by the author.

This little book is in no sense an exhaustive one; in fact, Professor Sturmer specifically states that he has included only such portions of grammar as are required for the correct use of medical nomenclature. He has used the same matter in the class-room for several years in manuscript form and has thus tested its efficiency.

Medicolegal

Pyemia, "Pennyroyal Pills" and Evidence in Abortion Case

The Supreme Court of Indiana says, in Carter vs. State, where an indictment charged said Carter with producing a woman named to miscarry from taking "a certain drug, medicine, and substance," that the woman died from "pyemia" (pus in the blood produced by a germ shown to be introduced invariably from the exterior), and that the accused laid stress on the fact of this cause of death, arguing therefrom that some means other than drugs or medicines were used by which infection was produced. But that was simply one presumption built on another. The gravamen (essence) of the offense, under section 2256 of Burns' Annotated Statutes of Indiana of 1908, is prescribing or administering to a pregnant woman, or woman supposed to be pregnant, any drug, medicine, or substance whatever, with intent to produce a miscarriage, or the suggesting, directing, or advising the use of any instrument or means whatever with such intent, whereof the woman miscarries or dies, miscarriage not being necessary to preserve her life. In this case death occurred in about two months after the miscarriage, but the offense is complete when the miscarriage is produced contrary to the statute.

It was insisted by the accused that there was no evidence in the record that the "drug, medicine, or substance" taken by the deceased at his instigation produced the abortion. But the court holds otherwise, it being shown, among other things, that he procured and urged her, over her objection, to take what he told her were pennyroyal pills for the purpose of procuring a miscarriage; that she took them as he directed, taking the last one on Sunday evening, and aborted Thursday night; that she took nothing except what he had given her, and did nothing else. The ingredients of the "pennyroyal pills" which she took were not known or shown, but "pennyroyal pills" are an emmenagogue, and are used for that purpose, and is a name given to some two dozen varieties of compounds of various substances, including ergot, an emmenagogue. It was true that there was evidence that pennyroyal pills will not produce miscarriage, this evidence being based on the supposition that pennyroyal pills are made of pennyroyal; but the evidence also showed that it is a name used for compounds which are emmenagogues, and that they are such compounds, and, while there was no evidence as to the compound in the particular pills, the accused evidently understood their uses, and procured them, and urged the woman to take them for the express purpose of producing her miscarriage.

There was also evidence that no medicine can be said to be sure to produce a miscarriage, and that nothing but mechanical means can be so relied on; but that many kinds of medicine may and do produce miscarriage, depending on the physical condition of the female. The evidence showed that the woman had an adhesive womb, and that the likelihood of miscarriage was greater, both from natural and artificial means, than in case of the normal womb, and it was argued that an abortion was inevitable, and could as well be ascribed to the peculiar condition of the womb as to some unknown drug, medicine, or substance. If the position of the accused was correct on that point, it only accentuated the offense by showing that the woman was in a condition the more readily to abort by the use of pennyroyal pills. But the evidence showed a medicine, drug, or substance given, the specific properties of which were to contract the female womb, and produce menstruation, or miscarriage; that it was procured by the accused, and urged by him to be taken for the specific purpose on his part of producing a miscarriage, and that it was taken as directed by him, and that a miscarriage resulted. The evidence also showed that the woman became very ill, and was unconscious and unattended when the miscarriage resulted, and for a day or two afterward, and the conditions could be better imagined than described, so that the opportunities for the infection from which death actually resulted were doubtless attributable to these conditions, but they did not avoid the force of the evidence on the one question which constituted the crime with which the accused was charged.

Complaint was also made of the refusal of certain evidence offered, claimed as part of the res gestae (essential circumstances of the case)—that some days prior to the taking of medicine the woman had made inquiries as to mechanical methods of producing miscarriage. At most, it could only be an inference that she might have used some mechanical means, and that such means might have produced her miscarriage, and inferences can not be built on inferences. It is manifest that such evidence was not competent as a part of the res gestæ when shown to be a matter of inquiry only, and made some days before the taking of the medicine, and unconnected with any act or declaration of intent, and especially when taken with the other evidence in the case, in which it was disclosed that nothing was used but the drugs procured by the accused, and was clearly not admissible under the evidence and charge here of producing an abortion by medicines or drugs.

Under these circumstances the court holds there was evidence to support every material fact necessary to constitute the offense charged, and affirms a conviction.

Admissible Evidence When Attending Physician Was in Employ of Defendant

The Supreme Court of Minnesota holds, in the personal injury case of Brown vs. Minneapolis, St. Paul & Sault Ste. Marie Railway, Co., that a witness having testified that he knew in whose employ a physician was, it was error to refuse to allow him to state whether or not the physician was in the employ of the defendant. In this case it was sought to fasten on the railway company liability for injuries which it was contended were caused by the explosion of a torpedo negligently left on the track. After the accident the plaintiff was taken to a hospital where his injured eye was removed. It was claimed that a small piece of tin was removed from the eye, and for the purpose of showing that fact, and statements made by the physician, the plaintiff offered to show that the physician was at the time in the employ of the defendant company. As the plantiff's counsel put it, he proposed to show that the physician who performed the operation was the company's physician; in its employ, and that any declaration made by the physician to the plaintiff was admissible in evidence as that of an agent of the company, against interest. The court holds that it was error to exclude the evidence, it being material to the plaintiff's case as it tended to connect the injury with what the plaintiff claimed was the cause of the action. It says that if the physician was, at the time of the operation, in the employ of the railway company, it was competent for the plaintiff to show statements made by him at the time as to the condition of the wound and that the article which he then exhibited to the patient had been taken from the eye.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

August 28

1 *Serology of Syphilis. R. C. Matson, Portland, Ore.
2 *Scarlatina and Diphtheria Successfully Treated without Medicine. W. H. Thomson, New York.
3 *Large Glioma Growing from the Basal Ganglia Producing Symptoms Suggestive of a Growth in the Frontal Region. T. Diller, Pittsburg.
4 Diagnosis of Tricuspid Stenosis. D. Felberbaum, New York.
5 Unusually Intractable Case of Iritis. Etiology of Iritis. W. C. Posey, Philadelphia.
6 Early Diagnosis of Pulmonary Tuberculosis. L. M. Gaines, Atlanta, Ga.
7 *Estimation of the Urinary Ammonia; and New Instrument for its Rapid Estimation. H. R. Harrower, Chicago.

1. Serology of Syphilis.—Speaking of the Wassermann reaction, Matson says that the rarity of a positive reaction in normal serum and the high percentage of positive reactions in syphilis or suspected cases clearly shows the test to be of much value. A positive reaction is found with the greatest frequency in early cases, and least frequently in latent cases.

A positive reaction means that active syphilis exists, but does not necessarily mean that the present pathologic condition is due to syphilis that must be determined clinically; but it does indicate that there should be a trial of antisyphilitic treatment. A negative result may be interpreted in many different ways. A negative reaction occurring in one who has had syphilis does not mean absolutely that the patient is well, but that the infection, if present at all, is quiescent. If a negative reaction occurs in an early suspected case, it is from 95 to 100 per cent. against syphilis. If obtained in a suspected secondary case, the chances are from 75 to 95 per cent. against syphilis. If obtained in a suspected latent case, the chances are from 50 to 75 per cent. against syphilis. If obtained in a suspected parasyphilitic case, the chances are 70 to 80 per cent. against its existence. Since antisyphilitic treatment may cause the reaction to disappear it may be an index as to the efficiency of a line of treatment in that particular case.

2. Abstracted in The Journal, June 19, 1909, p. 2017.

3. **Glioma of Basal Ganglia.**—Diller describes a case of glioma of the brain with optic neuritis, headache, confusions, slowness of mind, loss of memory and absence of any hemiplegia, or other paralysis, which was very suggestive of a tumor of the frontal lobes. Autopsy showed a glioma in the right hemisphere the size of a Tangerine orange. An exploratory operation did not reveal any tumor, but gave great relief to the headache and eye symptoms.

7. **Estimation of Urinary Ammonia.**—Harrower uses a graduated tube of glass. The test is made by filling the tube up to the 10 mark with the urine to be tested, and adding 3 drops of an indicator, in the form of 0.5 per cent. solution of phenolphthalein in 50 per cent. alcohol; then 3 or 4 grams of a potassium oxalate solution are added and the tube filled with water to the zero mark. The tube is closed, shaken and decinormal soda solution added up to a pink color. The total acidity is read off and marked down. Then 2 or 3 c.c. of dilute formalin solution are added. The pink color is discharged by the acids; and decinormal soda solution is again added till the pink color is again produced. Each cubic centimeter of decinormal soda solution represents 0.00068 grams of ammonia. The amount per cent. is obtained by multiplying by ten. The normal degree of urinary acidity fluctuates between 30 and 40 degrees.

New York Medical Journal

August 28

8 The Medical Profession for 6,000 Years. J. J. Walsh, New York.
9 Peritoneal Adhesions. B. Robinson, Chicago.
10 Mind and its Relation to Heredity. C. F. Clowe, Schenectady, N. Y.
11 Tuberculosis of the Knee Joint. I. D. Steinhardt, New York.
12 *Pathology of Pseudohypertrophic Muscular Dystrophy. F. C. Potter, Philadelphia.
13 *Results of Treatment in 172 Cases of Pulmonary Tuberculosis in the Out-Patient Department of the German Hospital. G. L. Rohdenburg, New York.
14 *Blood Pressure in General Paresis. A. Schmiergeld, New York.

12. **Pseudohypertrophic Muscular Dystrophy.**—Potter reports a case which he believes supports the view held by others as well as by himself that there may be transitional forms of dystrophy in which alterations in the nervous system go hand in hand with diseases of the muscles. Pseudohypertrophic muscular dystrophy developed in a boy with no antecedent or family history early in life; and from the age of 9 until the time of his death at 15, he could not walk. At the time of death, resulting from pneumonia, there was inability to use the lower and to a less extent the upper limbs, hypertrophy with fatty infiltration of the calf and thigh muscles, protrusion of the abdomen, atrophy of the chest, shoulder and arm muscles, and a complete loss of reflexes.

Necropsy demonstrated typical changes in the peripheral muscles, smallness and degeneration of the peripheral nerves, diminution in the size and degeneration of the anterior roots with a degeneration and some disease of the cells of the anterior horns, most marked in the ventromesial group and in the cells of Clarke's column, especially of the lumbar cord. Besides there was a marked fatty infiltration in the liver with an hypertrophy, atrophy and fatty infiltration of the heart muscle with a slight fibrosis.

13. **Tuberculosis.**—Of 172 patients under treatment, 16 died, and are not taken into consideration, except in estimating the percentage of results. The cases were not selected, and Rohdenburg says that fully 25 per cent. of those patients now classed as improved will in another 12 months be placed either in the apparently cured or arrested class, if the present rate of progress is kept up. The results obtained in the various stages of the disease are as follows: All stages: Apparently cured, 3 (1.75 per cent.); arrested, 14 (8⅛ per cent.); improved, 65 (37⅝ per cent.); not improved, 74 (43 per cent.); died, 16 (9.05 per cent.). Cases in the first stage, 76: Apparently cured, 3; arrested, 8; improved, 43; not improved, 22. Cases in the second stage, 56: Apparently cured, 0; arrested, 6; improved, 20; not improved, 30. Cases in the third stage, 24: Apparently cured, 0; arrested, 0; improved, 2; not improved, 22.

14. **Blood Pressure in General Paresis.**—Schmiergeld found that the blood pressure in general paresis is very variable. In the majority of cases, however, it seemed to be lower than in normal individuals. There apparently exists no relationship between the mood of the paretic and the arterial tension; elated paretics may have a high pressure and depressed paretics a low one.

Boston Medical and Surgical Journal

August 26

15 Heart Disease in Infancy and Childhood. J. L. Morse, Boston.
16 Differential Diagnosis of Cerebellar Tumors. E. Jones, Toronto.
17 *Work as an Immediate and Ultimate Therapeutic Factor. F. L. Hills, Rutland, Mass.
18 Studies in Psychopathology (continued). B. Sidis, Brookline, Mass.
19 Pregnancy, Uterine Myomata and Peritonitis. J. G. Mumford, and J. B. Hartwell, Boston.

17. **Work as a Therapeutic Factor.**—At the sanatorium at Rutland, a system of work has been in operation for several years. All patients who can exercise without symptoms are expected to work from half an hour to two hours daily. The work allotted to them is the making of beds, care of the wards, wiping the woodwork with damp cloths, carrying trays, serving lunches, picking up about the lawns and walks, running a lawn mower, etc. The lighter work is first given to the patients, and the heavier work, such as carrying trays and running the lawn mower, is given after they have demonstrated their ability to do the light work without reaction. The number of patients at present doing this grade of work is 132, or 38 per cent. of the whole number under treatment.

The ultimate results of exercise seem to be well exemplified by the subsequent history of those patients who worked while in the sanatorium and also played ball on the team, which for several years has been a feature at Rutland. The rather strenuous exercise in which these patients indulged, in addition to their work, afforded a pretty severe test of their physical condition. During the last five years, 27 patients were allowed to play on the ball team. All these men were working four and one-half hours and their exercise was not restricted. They were picked men, selected from the daily average population of 180 men. All had been under observation and sanatorium treatment for several weeks or months and had been worked up to this amount of exercise gradually. The disease was incipient in 12 and moderately advanced in 15.

Their condition on discharge from the sanatorium was as follows: Apparently cured, 3; arrested, 11; improved, 13; average duration of residence, eight months.

The subsequent history of these men showed that 22, or 81.4 per cent., are to-day doing fulltime work, 2 are working part of the time, but have had relapses, and 3 are dead. Of the latter, 2 resumed intemperate habits after leaving the sanatorium, and their early death was directly traceable to dissipation. One had a relapse after returning to work and died of a pulmonary hemorrhage.

The above facts are given, not in advocacy of baseball as a therapeutic agent, but simply to show that, in selected cases, pretty strenuous exercise can be allowed with safety and even with advantage to the patient in hardening him and building up his resistance.

Lancet-Clinic, Cincinnati

August 21

20 Surgical Treatment of Puerperal Eclampsia. M. A. Tate, Cincinnati.
21 Pathology and Diagnosis of Dilatation of the Renal Pelvis. L. W. Bremerman, Chicago.

Kentucky Medical Journal, Bowling Green

August 1

22 *Sanitary Condition and Needs of Kentucky.
23 Acute Gastroenteric Infection in Children. Diagnosis, Complications, Prognosis and Treatment. J. C. McCreary, Cave City.
24 Case of Inverted Uterus. T. J. Bullock, Freedom.
25 Mechanical Therapeutics and its Application in Chronic Diseases. J. T. Green, Leitchfield.
26 Chorea and Conditions Leading to it. W. J. Shacklett, Nolin.
27 Marvelous Advance in Medicine in the Nineteenth Century. J. N. Todd, Fredonia.

August 15

28 Management of Chronic Valvular Heart Lesions in Childhood and Adolescence. J. R. Morrison, Louisville.
29 The Medical Director. D. H. Kellar, Louisville.
30 Angiosarcoma of Kidney. A. M. Vance, Louisville.
31 Cancer of Bladder. A. Schachner, Louisville.
32 *Pseudocyesis. H. E. Tuley, Louisville.
33 Double Suppurative Parotitis Following Salpingo-Oöphorectomy. J. H. Peak, Louisville.

22. Abstract of and comment on this article appears in the Department of Medical Economics, this issue.

32. **Pseudocyesis.**—Tuley reports the case of a woman, aged 54, married 25 years, who never conceived. Her last regular menstruation was in July, 1908. She missed in August, but menstruated on September 15, when due. This period lasted the full five days, but the amount was much less than usual. From this time there was no menstruation until January, 1909, when the flow lasted only part of a day and was very slight. This spotting was repeated in February for a part of a day. Early in October, morning sickness was noted, especially when brushing her teeth, this continuing until early in January. At no time was there vomiting. In January it became necessary to increase the size of her skirt bands, which were uncomfortably tight owing to increase in size. A noticeable tenderness of her breasts and an apparent enlargement were present at this time. Very shortly cravings for unusual articles of food were noticed and commented on by patients and friends. On Feb. 10, 1909, a faint flutter was noticed in the region of the pubes, which was thought to be quickening, but it was very indistinct, and it was not until February 12 that the movements could be felt and confirmed by the patient with the hand on the abdomen. This movement was continuous and often annoying to the patient when awake.

From this time until March 26 the "pregnancy" advanced normally, with gradually increasing enlargement of the abdomen. Tuley then saw the woman. Inspection of the abdomen revealed an enlargement extending midway to the ensiform cartilage, entirely symmetrical, and on palpation the abdomen was soft and no tumor could be felt. By vagina the uterus was found to be practically normal in size and in good position. The enlargement of the abdomen was entirely a gaseous distention of the intestines. Under restricted diet, daily high colon irrigations, saline cathartics once daily and lactic acid bacteria tablets three times a day, the abdominal distention disappeared. The patient returned home in ten days, having entirely recovered.

Medical Fortnightly, St. Louis

August 10

34 The Crusade Against Cancer of the Uterus. A. Samuels, Baltimore.
35 Little Stories of Physician and Patient. A. H. Moodricker, Wabash, Ind.

Journal of Ophthalmology and Oto-Laryngology, Chicago

August

36 Pterygium. M. Iverson, Stoughton, Wis.
37 Interstitial Keratitis Probably Due to Autointoxication. H. B. Williams, Chicago.
38 A New Eye Irrigator. G. G. Lewis, Syracuse, N. Y.
39 Diagnosis of Adenoids in Children and in Adults. H. Hays, New York.
40 A Critique of the So-Called Modified Radical Mastoid Operation. S. J. Kopczky, New York.

Bulletin American Academy of Medicine, Easton, Pa.

August

41 *American Characteristics and Professional Responsibility. H. C. Putnam, Providence, R. I.
42 Functions of the Medical School. E. H. Long, Buffalo.
43 Standards of Medical Education. H. S. Pritchett, New York.
44 A Medical Student in 1867. J. A. Wyeth, New York.
45 The Combined Course. W. H. Carpenter, New York.
46 The Present Status of Medical Education. F. C. Zapffe, Chicago.
47 The Five-Year Medical Course. J. Rogers, New York.

41. Abstracted in THE JOURNAL, July 17, 1909, p. 224.

Journal of Biological Chemistry, Baltimore

August

48 *Spontaneous Oxidation of Cystin and the Action of Iron and Cyanids on it. A. P. Mathews, and S. Walker, Chicago.
49 Action of Metals and Strong Salt Solutions on the Spontaneous Oxidation of Cystein. A. P. Mathews and S. Walker, Chicago.
50 *Nature of the Chemical Mechanism which Maintains the Neutrality of the Tissues and Tissue Fluids. T. B. Robertson, Berkeley, Cal.
51 *Uricolysis, with Particular Reference to the Pathogenesis of "Uric-Acid Infarcts" in the Kidney of the New-Born. H. G. Wells, and H. J. Corper, Chicago.
52 Protein Metabolism in Cystinuria. H. B. Williams, and C. G. L. Wolf, New York.
53 Indirect Colorimetric Determination of Phosphorus with Uranium Acetate and Potassium Ferrocyanid. R. B. Gibson and C. Estes, Columbia, Mo.
54 Effect of Shaking on the Activity of Ptyalin. M. M. Harlow, and P. G. Stiles, Boston.
55 Estimation of Total Sulphur in Urine. S. R. Benedict, Syracuse, N. Y.

48. **Action of Iron and Cyanids on Oxidation.**—Mathews and Walker conclude their work on the oxidation of cystein with the following summary: The spontaneous oxidation of cystein to cystin is enormously accelerated by a very small amount of iron. In $\frac{M}{100,000}$ solution the oxidation is doubled. The acceleration involves a temporary union of the oxidized iron with cystein, forming a violet compound. The combination is probably with the sulphur of the cystein. The oxidation is accelerated also by gold, platinum, copper and mercury among the metals; and by arsenic among the metalloids. It is strongly retarded by lead, nickel, cobalt, uranium, thorium, zinc and cadmium. Cobalt inhibits more than nickel. These salts inhibit the accelerating action of the iron. The oxidation is not affected by medium amounts of manganese, barium, calcium, sodium or potassium salts. It is greatly reduced by concentrated barium chlorid solutions and by 4 molecular solutions of sodium, potassium and calcium chlorid solutions. In the particulars just noted, the spontaneous oxidation of cystein shows many interesting parallelisms to the oxidations of the cells.

50. **Neutrality of Tissues.**—According to Robertson's view, the proteins play a prominent rôle in the preservation of the neutral reaction of animal organs and fluids, since they are capable of absorbing a large amount of acid without materially affecting their reaction. The readiness with which the proteins combine with alkalies, expelling carbon dioxid from the bicarbonates, may explain the escape of carbon dioxid from the blood during respiration. The opinion of Henderson that "the importance of the proteins, through their alkali compounds, in the preservation of neutrality in true solution is surely secondary," is not justified, according to Robertson, by the facts described in his paper.

51. **Uricolysis and Uric-Acid Infarcts.**—The results of the work of Wells and Corper indicate that the human organism has power to form uric acid from other purins, but possesses no uricolytic power so that it can not destroy the acid once formed. The absence of uricolytic enzymes is demonstrated not only in the human fetus, but also in the organs of adults. The experiments of Schittenhelm indicated that the liver, kidney and muscle of the fetus were actively uricolytic, but Wells and Corper found the opposite to be the case. The uric-acid deposits in the kidneys of infants can not be explained by a tardy development of a uricolytic enzyme, but are probably due to the high proportion of uric acid in the urine of infants together with local conditons in the kidney which favor its deposition.

Journal Oklahoma State Medical Association, Muskogee

August

56 Diagnosis and Treatment of Malaria in Different Localities. F. B. Erwin, Wellston.

57 Abdominal Myomectomy for Large Uterine Fibroids. W. J. Frick and H. P. Kuhn, Muskogee.
58 Use and Abuse of the Curette. T. J. Dodson, Mangum.

Annals of Surgery, Philadelphia

August

59 *Jejunal and Gastrojejunal Ulcer Following Gastrojejunostomy. H. J. Paterson, London, Eng.
60 *Surgical Procedures Designed for the Relief of Pulmonary Tuberculosis. C. A. Powers, Denver, Colo.
61 Pistol-Shot Wound of the Axillary Artery. F. W. Murray, New York.
62 *Treatment of Diffuse Septic Peritonitis. R. G. LeConte, Philadelphia.
63 Volvulus of Giant Sigmoid Colon. W. B. Coley, and I. S. Chaffee, Sharon, Conn.
64 *Large Sliding Hernias of the Sigmoid. L. W. Hotchkiss, New York.
65 The Fat Appendix. H. A. Kelly, Baltimore.

59. **Jejunal Ulcer.**—One of the two cases reported by Paterson is of interest because it is the first case in which an attempt has been made to obtain an accurate analysis of the gastric contents, and of the fluid escaping from the jejunal fistula before and after operation for ulcer of the jejunum. The operation was an anterior gastrojejunostomy for pyloric stenosis with perforation of a jejunal ulcer five years later; resection of the affected portion of the jejunum, and anterior gastrojejunostomy "en-Y" ("Roux operation"). The patient recovered. Paterson also cites briefly 61 other cases recorded in the literature, a study of which shows that the risk of jejunal ulcer following gastrojejunostomy is probably under 2 per cent.

Clinically, there are two groups of cases: (1) Those in which perforation into the general peritoneal cavity ensues; (2) those in which general peritonitis is prevented by the formation of adhesions. Pathologically, the cases may be classified as follows: (1) Ulcers of the jejunum; (2) gastrojejunal ulcers, or ulcers at the site of the anastomosis.

Jejunal ulcers in some instances are of infective origin. In these cases ulceration commences within a very short interval after gastrojejunostomy, and usually the ulcers are multiple. In a large proportion of cases the ulcer is single, and is probably the result of the toxic action of hydrochloric acid, which injures the cells of the mucous membrane so that they are digested by the intestinal juice. Possibly other agents than hydrochloric acid may play a part in injuring the mucous membrane. Gastrojejunal ulcers are a direct consequence of the wound made in effecting the anastomosis, and their persistence is probably the result of hyperacidity of the gastric juice. Closure of a gastrojejunostomy opening is the consequence of cicatrization of a gastrojejunal ulcer. It is more likely to occur when the pylorus is patent, not because of the patency of the pylorus, but because in such cases hyperacidity is usually markedly present.

Any procedure or disease which diminishes the amount of bile and pancreatic juice in the jejunum favors the occurrence of jejunal and gastrojejunal ulcer. For this reason operations of the "Y" type and enteroanastomosis are inadvisable, at any rate in cases in which free hydrochloric acid is present in the gastric contents, as after these procedures the anastomosis and a portion of the jejunum are deprived of the protective influence of the alkaline bile and pancreatic juice. As no instance of ulcer after the posterior no-loop operation has yet been recorded, it must be assumed that its occurrence after this type of operation is less likely. It is possible, however, that this immunity is partly the result of improvements in technic, and in the after-treatment of gastric operations in general. In cases in which perforation into the general peritoneal cavity occurs, immediate laparotomy offers the only chance of saving the patient's life.

Inasmuch as there is some evidence that jejunal gastrojejunal ulcers may heal, an operation should not be performed in the chronic cases [illegible] after a thorough trial of medical treatment. Even wh[illegible] l inter[illegible]n is necessary, an attempt should first [illegible] dimi[illegible]cidity, if this be present. The aim [illegible] occurrence of this complication of g[illegible] treatment consists in (1) careful [illegible]nic, and (2) prolonged after-tre[illegible]on th[illegible] every case of recrudesce[illegible] gastrojejunostomy, espe[illegible]ity of hypersecretion, should be regarded as a case of potential ulcer and treated accordingly.

60. **Surgical Procedures for Tuberculosis.**—Pneumotomy with drainage of a tuberculous cavity was employed twice by Powers, in each case draining a cavity in a lower pulmonary lobe. In the first instance, a man, aged 42 years, suffered from a fairly large cavity in the left lower lobe. Costal resection was done and the pleuræ were found adherent; the lung was incised and the cavity entered at a depth of about 1½ inches; drainage. Improvement was but temporary, a sinus persisted and the patient succumbed to tuberculosis in a few months.

In the second case, a woman of 27 gave a history of pulmonary tuberculosis of six months' duration; she had lost in flesh and strength and had a purulent expectoration of 6 ounces daily. She was supposed to have an encapsulated empyema just below and within the angle of the right scapula. Costal resection showed that the pleuræ were adherent. Pleural separation discovered no pus. A needle thrust into the lung withdrew pus. An incision was made and a moderate cavity was entered at a depth of about one inch. Trabeculæ were broken down, gentle curettage was made; drainage was instituted. Bacteriologic investigation showed a mixed infection. This patient underwent a fairly speedy improvement. At the time of last report, one year after operation, the woman had gained materially in flesh and strength; expectoration was practically *nil*. A discharging sinus persisted.

62. **Treatment of Diffuse Septic Peritonitis.**—In three cases reported by Le Conte the essentials of the Murphy treatment were practiced: namely, a speedy operation; removal of the cause with the least possible traumatism to the peritoneal surface; no douching of the peritoneal cavity; the exaggerated Fowler position; and continuous enteroclysis by the drop method. In six other cases the peritoneal cavity was flushed with warm saline solution. The head of the bed was but slightly raised, the patients lying on the back or being turned on the right side, and salt solution was given by rectum—six fluid ounces every fourth hour.

In this series of nine cases there was but one death, which occurred on the fourteenth day after operation, probably from secondary infection of the liver, plus secondary hemorrhage. A postmortem examination was not allowed. In all instances the patients arrived in the hospital in such serious condition that they were at once transferred from the receiving ward into the operating room.

64. **Sliding Hernia of Sigmoid.**—In Hotchkiss' case the sac was large and reached well down into the scrotum. It contained omentum and small and large intestine. All the contents were easily reducible, through the wide internal ring, save a long piece of the sigmoid colon which was adherent by a short mesocolon to the posterior wall of the sac, to the extent of about four inches. Under these conditions it was, of course, impossible to close off the neck of the sac by any of the usual means of ligation or suture. The mesosigmoid being short, could not be tied off so as to permit the reduction of the gut without danger of causing necrosis. In order to overcome this difficulty, Hotchkiss constructed an elongated mesocolon from the tissues of the hernial sac wall in such a manner as to permit of the easy and perfect reduction of the gut into the abdominal cavity, and not to interfere with the suture of the internal opening of the sac. The steps of the operation are as follows:

Having freed the sac from the cord to its full extent, the sac is opened anteriorly and its reducible contents replaced within the abdomen, and held there by a gauze pad. The incision in the sac is then prolonged upward to the internal ring and downward nearly to the lowermost point of attachment of the mesosigmoid on its posterior wall, which permits easy eversion of the sac wall. Grasping the adherent sigmoid and pulling it gently forward, it will be found that the peritoneum of the split hernial sac will become everted in such a manner as easily to form a new and elongated mesentery for the sigmoid, with its smooth peritoneal surfaces turned outward to form its free surface, and its outer or non-peritoneal surfaces [illegible]lling in contact. Suturing the edges of this new mesentery [illegible]her permits its enlongation to an extent sufficient to allow the perfect reduction of the sigmoid into the abdominal cavity. When this step has been accomplished the somewhat irregular-shaped opening into the abdominal cavity may be sutured tightly by a purse-string suture introduced from within, or by any other form of suture which seems best to meet the case.

Therapeutic Gazette, Detroit

July

66 Operative Treatment of Papilledema Dependent on Increased Intracranial Tension. G. E. de Schweinitz, and T. B. Holloway, Philadelphia.
67 Prognosis and Treatment of Certain Prostatic Diseases. F. W. Robbins, Detroit.
68 Relation of the Eye to General Disease. L. F. Appleton, Philadelphia.

August

69 Selection of Cases and the Limitations of Specific Treatment in Tuberculosis. K. von Ruck, Asheville, N. C.
70 Treatment of Facial Neuralgia with Injections of Alcohol Loco Dolenti. A. Gordon, Philadelphia.
71 Stypticin in Uterine Hemorrhage. H. I. Berger, Indianapolis.
72 Nutrition in its Application to Health. R. S. Tyrrell, Toronto.

American Medicine, New York

July

73 Abstracts of Medical Articles. H. Stern, New York.
74 Coordinance of Laboratory Work and Inspection in Supervising the Milk Supply. W. R. Stokes and T. M. Wright, Baltimore.
75 Psychology of the Tobacco Habit. J. L. Tracy, Toledo, Ohio.
76 Problem of Race Suicide: Problem Rather of National Hygiene and Prophylaxis than Political Economy. E. H. F. Pirkner, New York.
77 Dispensaries. F. D. Lewis, Buffalo.
78 Action of Glandular Extracts on Diuresis. I. Ott, and J. C. Scott, Philadelphia.

Journal Missouri State Medical Association, St. Louis

August

79 *Diagnostic Value of the Systolic Murmur at the Apex of the Heart. F. W. Froehling, Kansas City.
80 Prevention of Ophthalmia Neonatorum. P. I. Leonard, St. Joseph.
81 The New Standard of Diet. I. J. Wolf, Kansas City.
82 *Fractures: Problems and Possibilities of a Country Practitioner from a Surgical Standpoint. T. F. Lockwood, Butler.
83 The Missouri State Medical Association: What it should Mean to a Missouri Doctor. T. Brown, Hamilton.
84 The Missouri State Medical Association: What it should Mean to the State at Large. E. C. Grim, Kirksville.
85 Prosecution of Irregulars: From Experience of a County Secretary. M. A. Smith, Gallatin.
86 The Secretary's Work: From a Business Standpoint. E. N. Chastain, Butler.
87 What the County Secretary can do to make the State Journal a Forceful Element in Medical Organization. E. J. Goodwin, St. Louis.

79. **Systolic Murmur.**—Froehling warns against basing a diagnosis of heart disease on the presence of a systolic murmur at the apex. The totality of the symptoms, with the history of the case, must also be taken into consideration.

82. **Fractures.**—Lockwood details cases of fracture of the skull, and describes at length his treatment, including the use of splints especially devised by him for Colles' fracture, Pott's fracture and fracture of the femur. It is the purpose of the paper to show that equally good results can be obtained in the country from the proper treatment of these cases as in the cities.

Journal of Advanced Therapeutics, New York

August

88 The General Practitioner his own Radiographer. E. G. Edwards, La Junta, Colo.
89 The Static Brush Discharge. F. De Kraft, New York.
90 Static Electricity. E. G. Wilkinson.
91 Alto-frequent Cytolysis of Cancer (continued). J. A. Riviere, Paris, France.

Texas State Journal of Medicine, Fort Worth

August

92 *Appendicostomy, with Review of Literature and Report of Cases. W. B. Russ, San Antonio.
93 Gynecologic Progress. H. M. Doolittle, Dallas.
94 The Diathesis. G. H. Moody, San Antonio.
95 The Clinical Laboratory for the Internist; its Essentials for Equipment; its Uses; its Abuses. O. I. Halbert, Waco.
96 Syphilis as a Cause of General Paresis. W. L. Allison, Fort Worth.
97 Organization of the Texas Antituberculosis Association. W. N. Brumby, Austin.
98 Tumors of Orbit. E. H. Cary, Dallas.
99 Obscure Causes of Fever Occurring in Infancy and Early Childhood. W. W. Butterworth, New Orleans, La.

92. **Appendicostomy.**—Russ publishes a rather complete review of the literature on this subject, and reports four cases seen by him in which he resorted to appendicostomy. These comprised: two cases of amebic dysentery and one each of anemia and mucous colitis. The results obtained were very encouraging. He also describes the technic of the operation and its indications.

New York State Journal of Medicine, New York

August

100 The Physician's Demands of the Pharmacist. W. A. Bastedo, New York.
101 *The Sufficiency of Standard Remedies for Therapeutic Needs. R. A. Hatcher, New York.
102 The Pharmacist's Ability to Meet the Physician's Demands. H. C. Dickman, New York.
103 The Relations of the Physician and the Pharmacist. W. C. Anderson, Brooklyn.
104 *Reform in Proprietary Medicines. W. D. Alsever, Syracuse, N. Y.
105 The Expert in Psychiatry on the Witness Stand, and Certain Causes of Insanity. H. E. Schmid, White Plains, N. Y.
106 Acute and Chronic Nephritis in the Young. A. A. Gillette, Rome.
107 Essentials in the Diagnosis of Diseases in Children. New Rochelle.
108 Fracture of the Skull. H. C. Rooth, Buffalo.

101. **Sufficiency of Standard Remedies.**—Standard remedies are those which measure up to the requirements approved by well-informed members of the profession. The Pharmacopeia is the highest standard for therapeutic agents. The large number of official substances—far exceeding the capacity of any man to know thoroughly and to use with skill—is presented under a great variety of forms to suit the most varied conditions. But the crucial question is to what extent does it include that which is really valuable in therapeutics. Many would be sadly handicapped by the loss of all unofficial remedies, but Hatcher believes the true explanation of this lies in the fact that we have permitted the proprietary interests to train us in the use of their products, until we have come to depend on them instead of familiarizing ourselves with official substances, and learning the possibilities afforded by the intelligent use of them. This crucial question can be answered correctly only when we have determined how many of the unofficial substances are indispensable even to one who is well acquainted with those which are official and is able to use them properly.

The stock argument of those who cling to the use of proprietary preparations and ready-made mixtures is that phenacetin and antifebrin were indispensable long before they became official. To cite these in support of the argument of the insufficiency of standard remedies is a confession of ignorance. They are the result of careful scientific investigations, the highest aim of therapeutics, but it is, indeed, a far cry from phenacetin to antikamnia. Every proprietary remedy is in the experimental stage, and physicians owe it to themselves and to their patients to disregard the literature gratuitously supplied by the manufacturers. Commercial men are not philanthropists; they are optimists and use the bright lexicon of youth which lacks a certain word with which their followers become all too familiar. Even in Germany, there are signs of awakening from the apathetic attitude toward this question, and protests are being made against the flood of fraudulent nostrums.

We do not need more new remedies which will save us the trouble of thinking, says Hatcher. The most urgent need in therapeutics to-day is the careful study of the best standard remedies which we now possess, for that man is recreant to his trust who accepts a fee from his patient and then trifles with that patient's health, while experimenting with secret remedies or those of which he knows little, and that little, often the mere statement of an irresponsible detail man who is hired to talk about that which he does not understand.

104. **Reform in Proprietary Medicines.**—Alsever says that many good men tell us that if we will confine our prescribing to U. S. P. and N. F. preparations we can accomplish more and have as elegant preparations as though we used proprietaries. The book entitled "New and Nonofficial Remedies," which contains descriptions of the remedies which have been accepted by the Council on Pharmacy and Chemistry of the A. M. A., gives reliable information regarding the remedies which since the last revision of the Pharmacopeia have seemed

to be of value. If we will confine ourselves to the drugs and preparations described in these three books we can not go far wrong. If we will decline to discuss with detail men remedies which do not bear a printed statement of their composition, and if we decline to use others unless they have been submitted to the Council for acceptance, we will not only keep our own skirts clear, but will also influence manufacturers to market only ethical goods. It is probably useless for a general practitioner to attempt to "try out" a new remedy. His observations will be so few and they will be made on people with such varying physical defects and modes of life that they will be valueless. If we can by individual and united efforts influence the medical, the religious and the daily papers to refuse medical advertisements which contain untruthful or grossly exaggerated statements, we will have accomplished a great good. It is our duty to the public to limit the use of secret remedies as much as possible.

110. **Wassermann and Noguchi Complement Fixation Test.**—Fox claims that of the different methods of serodiagnosis of syphilis depending on the principle of complement-fixation, that of Noguchi seems most perfect from a theoretic standpoint, and from the standpoint of simplicity in technic it stands without a rival. Fox states that his comparative analysis of the Wassermann and Noguchi tests shows, in cases of syphilis, a larger proportion of positive reactions with the Noguchi than with the Wassermann test.

Journal of Cutaneous Diseases, New York

August

109 Progress in Dermatology. T. C. Gilchrist, Baltimore.
110 Comparison of the Wassermann and Noguchi Complement-Fixation Tests. H. Fox, New York.

Montreal Medical Journal

August

111 Obstetric Nursing. H. M. Little, Montreal.
112 Psychoanalysis in Psychotherapy. E. Jones, Toronto.
113 The Divided Responsibility in Regard to Public Health. C. [illegible]
114 *[illegible] sociated with Vincent's Bacillus. H. [illegible]
115 *[illegible] R. E. McKechnie, Vancouver.
116 Further Indications for Cesarean Section. A. L. Smith, Montreal.
117 Gas-Air Anesthesia in Major Surgery. E. Archibald, Montreal.
118 Pirates of Medicine. J. McCrae.

114. **Ulcerative Stomatitis.**—Cushing reports cases to illustrate the association of a mildly contagious form of ulcerative stomatitis with the presence of Vincent's bacillus, i. e., with the symbiosis of *Bacillus fusiformis* and *Spirochæta dentium*. They occurred in institutions, in children from 3 to 8 years of age, all of whom suffered from malnutrition or ill-health, and there seemed to be a mild infectiousness about the disorder. The disease began as a small superficial ulcer at the margin of the gums and afterward extended in some cases in the form of an adherent false membrane or superficial necrosis to the mucous membrane of the cheek, the tongue or the fauces; there was a characteristic fetid odor, mild constitutional disturbance and enlargement of the neighboring lymph glands. Smears from the lesions showed the characteristic organisms in great numbers. All recovered in from one to three weeks. Potassium chlorate given internally seemed to hasten the recovery.

115. **Diphtheria of Intestines.**—McKechnie records an unusual case of dysentery. The patient was a girl, 6 years old, born in Fiji. The parents were on their way home to Germany, taking the child with them. Shortly before leaving Suva, the child was taken ill with what seemed a mild dysentery, and the condition persisted throughout the trip of two and a half weeks. On arrival at Vancouver, the child was emaciated and very much exhausted. The dysentery was fairly well held in check by the treatment the patient received on ship board, but she was having several small stools daily, stained with blood and consisting of mucus and pus. Some of the motions were of pure mucus—about half a pint at a time. Enormous quantities of streptococci were found in the stools. These rapidly disappeared under treatment with streptolytic serum, but the symptoms did not abate. Finally, cultures showed bacilli of the diphtheritic type. At once antidiphtheritic serum was used, with immediate improvement of the symptoms, and two days later a complete cylindrical cast of the bowel, about four inches in length, was passed. The child made a slow but uninterrupted recovery after this. The cast was examined microscopically, and proved to be a true diphtheritic membrane. It was noted that the patellar reflexes were absent. Later the patient developed paralysis of the anus, so that for a couple of weeks the bowels moved involuntarily.

Kansas City Medical Index-Lancet

August

119 Open Operation and the Internal Splint in the Treatment of Fractures. H. E. Pearse, Kansas City.
120 Causes and Prevention of Nervous Diseases. J. Punton, Kansas City.
121 Intrauterine Treatment. H. C. Crowell, Kansas City.
122 Treatment of Hay Fever. C. W. Gosney, Kansas City.
123 Treatment of Syphilis. N. O. Lewis, Kansas City.

Albany Medical Annals

August

124 *The Insanity Defense for Crime. J. B. Chapin, Philadelphia.
125 Selection of a Site for the Albany Tuberculosis Hospital. A. T. Laird, Albany.
126 Field of the Albany Red Cross in the Fight Against Tuberculosis. H. Van Rensselaer, Albany.
127 Review of Recent Work on the Pancreas. W. Tileston, Boston.

124. **The Insanity Defense for Crime.**—The prominent points presented by Chapin were suggested by participation as a witness or spectator in court, or by perusal of public reports. The important or dominating thoughts may be condensed as follows: He says that from common observation and experience, we recognize the fact that indulgence in passions may result in a loss of self-control and gradual degeneration which is acquired and not due necessarily to disease, inheritance or environment. If this is true of individuals, it is equally true that whole communities and even nations may degenerate to a low state or be destroyed from a lax administration of justice. Human and divine laws are intended to secure the preservation of social order and the betterment of a community. On their execution depends the security of human life. If self-preservation is a maximum or principle which may be a sufficient defense of the individual, in a larger sense self-preservation may be a warrant for a community to adopt extraordinary measures for its protection as well as for the prevention of crime. If persons actually insane have been convicted of capital crimes, which Chapin believes has been of rare occurrence, it has more frequently happened that crime committed in an exacerbation of some one of the human passions has been condoned mainly through a doubt of the sanity of the criminal, created by the evidence of medical witnesses who would not have felt warranted in signing a certificate of insanity for detention in a hospital, as no single symptom had been presented that antedated the criminal act.

In the opinion of some, the trial judges have freely opened the way to the introduction of extraneous issues; have permitted the introduction of highly technical questions, the use of scientific terms that do not imply necessarily advances in psychiatric knowledge, nor are universally accepted. It is admitted the names are new discoveries, unfamiliar, beyond the comprehension of the court and jury, in themselves having no significance, yet they have a mysterious influence, and work the court into a state of doubt or scientific indigestion. Chapin believes that insufficient attempts are made to differentiate the operation of the uncontrolled human passions from what we ordinarily understand to be the disease or condition we call insanity. Some amendment or change in the present practice of introducing the medical witness on the stand without bias or the suspicion of it would be welcomed, but it might be regarded as a gratuitous offer for a medical man to make suggestions about legal procedures that belong properly to the courts. The penologist must study whether it is possible that any modification of the penalties for crime can be made that would more justly recognize degrees of criminality.

Memphis Medical Monthly

July

128 The Narcotic Drug Addictions; Etiologic Factors; Principles Involved in Treatment; Reasons for Past Failures. G. E. Pettey, Memphis.
129 Fibroma of the Nasopharynx. R. H. T. Mann, Texarkana.

130 Mydriatics and Their Use in Eye Practice. J. W. Price, Memphis.
131 Chronic Appendicitis as a Cause of Dysmenorrhea. O. S. McCown, Memphis.
132 Diagnosis and Treatment of Acute Diseases of the Respiratory Tract in Infancy and Early Childhood. W. C. Campbell, Memphis.

University of Pennsylvania Medical Bulletin, Philadelphia

August

133 Opening of the New Medical Amphitheatre and Clinical Laboratory of the Hospital of the University of Pennsylvania. G. Dock, Ann Arbor.
134 *Active Bacterial Immunization in Animal Experimentation. B. A. Thomas, Philadelphia.
135 *The Typhoid Cutaneous Reaction. S. J. Deehan, Philadelphia.
136 A Rare Anomaly of the Kidney. G. Fetterolf, Philadelphia.
137 The Chemical Composition and Chemical Properties of Fluid Derived from a Pancreatic Fistula. J. B. Nutt, Philadelphia.

134. **Active Bacterial Immunization.**—Thomas found by experimentation that bacterial immunization can be established in rabbits by inoculations of various bacterines. The immunity endures for a period, the duration of which is, as yet, undetermined, but then declines. The duration and degree of bacterial immunization by some bacterines or bacterial suspensions is more lasting than by others, notably, in this series, that by the suspension of the tubercle bacilli, although absolutely properly sized and spaced inoculations might nullify these differences. In the presence of a severe intercurrent infection, the opsonic content of the blood is markedly diminished.

135. **Typhoid Cutaneous Reaction.**—The typhoid cutaneous reaction is a simple test which can be applied by the physician at the bedside. It is free from danger, and, is, therefore, far superior to the ocular reaction. It yields a positive reaction in from fifteen to twenty hours, or less, without giving rise to any discomfort or annoyance to the patient. The reaction gave positive results in every case of typhoid fever in which it was tried by Deehan, and negative results in diseases other than typhoid fever.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

July

138 Variations in the Medicinal Therapy of Pneumonia in the Last Half Century. A. Jacobi, New York.
139 Progress and Changes in the Treatment of Tuberculosis During the Past Twenty Years. E. R. Baldwin, Saranac Lake, N. Y.
140 Standardization of Materia Medica Products. F. R. Stewart, Philadelphia.
141 Pneumonia: Its Danger Point and How to Avoid it, According to Dr. Sajous. J. M. Taylor, Philadelphia.
142 Sciatica. J. V. Shoemaker, Philadelphia.
143 A Question in Therapeutics. B. Horne, Gas City, Ind.
144 Intestinal Obstruction Complicating Advanced Pregnancy: Operation; Recovery. J. A. McGlinn, Philadelphia.
145 The Effect of Tasteless Cold-Storage Chicken used as Food. E. Cutter, West Falmouth, Mass.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 14

1 *Double-Filigree Operation for the Radical Cure of Inguinal Hernia. L. McGavin.
2 [illegible] in. C. Coombs.
3 [illegible] of Palate, Face, and Neck. A. Keith.
4 [illegible] Paton.
5 *[illegible] of Operation Areas. J. L. Stretton.
6 Account of the Officer's Training Corps, with Special Reference to its Medical Branch. H. E. R. James.
7 Physical Training of Recruits in the Army. R. Porter.
8 Contrast between Treatment of the Wounded under the Moghul Emperors and King Edward VII, Emperor of India. T. H. Hendley.
9 Diagnosis of Syphilis by Laboratory Methods. P. W. B. Smith.
10 Arylarsonate Treatment of Syphilis. F. J. Lambkin.
11 Arsenical Compounds in Treatment of Syphilis. H. C. French.
12 Beneficial Results of Recent Sanitary Work in Malta. G. S. Crawford.
13 Permanent Attachment of Transport to Field Medical Units. P. B. Giles.
14 A British Man-of-War at Messina. F. F. Mahon.
15 Existing Ambulance Organization of the Home Railway Companies. J. M. Carvell.
16 Rhinology as an Aid to Diagnosis of Pulmonary Tuberculosis. W. C. Rivers.
17 Detailed Scheme for an Unexpected Landing Party Using Material Available on Board Ship. J. G. Wallis.
18 Fractures Occurring During Epileptic Fits. S. J. O. Dickins.
19 Christchurch Hospital, New Zealand. P. C. Fenwick.

1. **Double Filigree Operation.**—This method consists in strengthening the walls of the inguinal canal by the implantation of two filigrees of silver wire in the tissues in such a way that subsequent stretching or bulging is rendered impossible, and the necessity of a truss is entirely done away with. The filigrees are made in two sections—a pubic and an iliac section. The former is always made of the following dimensions: At the narrow end its width is 3/4 inch; at the wide end, 1½ inches, this being the usual length of the adult inguinal canal. Being constructed on the principle that every filigree, whether abdominal or inguinal, should be made with not fewer than eight loops to every inch of its midrib, this will give thirteen loops on either side of the pubic section of an inguinal filigree. The iliac section is made in such a way that its inner third corresponds in shape and size to the outer two-thirds of the pubic section. Its outer end must meet the requirements of the case, being trapezoid, square, or what is more usual, oblong, and of a total length of from 2½ to 3 inches, as may be found necessary. The wire must be unalloyed silver. These filigrees are so placed that the cord comes to be sandwiched, as it were, between two layers of filigree in the canal, the natural relations of which are hardly altered; and further, that the area external to the internal abdominal ring is fortified by a filigree of any size which may be deemed necessary.

5. **Sterilization of Skin.**—Stretton employs a modification of the method of skin sterilization with iodin, as used by Dr. A. Grossich of Fiume. He paints a wide area of the surface to be operated on with a 1 to 3 alcoholic iodin solution previous to the administration of the anesthetic. It is painted on very freely, especially over hairy parts, and allowed to soak in. It is again painted immediately preceding the operation. After the stitches are inserted they are painted over for a margin of an inch all round. The first and only dressing is usually made on the eighth day; the stitches are then removed, and the line of incision, with a margin of 1 inch, is painted with the iodin solution. If for any reason the wound requires to be inspected at an earlier date, it is painted as above described. No previous preparation of any kind is undertaken—no bath, no scrubbing and no shaving. The latter is an important point, because it saves the patient a good deal of after-discomfort. This is at variance with Grossich's method, and combined with the weaker solution of iodin constitutes the difference.

Lancet, London

August 14

20 *Malformations of the Heart. A. Keith.
21 *Preparation and Keeping Properties of Antityphoid Vaccines. D. Semple and H. S. Matson.
22 *Congenital, Hereditary, and Family Hematuria. J. Aitken.
23 The Genesis of the Modern Infirmary. F. S. Toogood.
24 Acute Pancreatitis with Fat Necrosis. F. W. Goyder.
25 Purpura Hemorrhagica Following the Use of Fibrolysin. S. C. Prichard.
26 Tetanus Treated with Antitoxin. R. C. Pitt.

20. **Malformations of the Heart.**—In this paper Keith discusses transposition of the arterial stems; reversion of the heart; imperfect separation of aorta and pulmonary artery; patent ductus arteriosus; malformation of the semilunar valves; imperfect formation of septa; the foramen primum; and patent foramen ovale.

21. **Antityphoid Vaccines.**—Semple and Matson found that the sterilization of antityphoid vaccine can be accomplished efficiently by the addition of 0.5 per cent. carbolic acid. Heating a vaccine in order to sterilize it introduces a harmful and unnecessary element which acts in two ways: (1) It diminishes its immunizing properties, and (2) it curtails its keeping properties. In the experiments recorded the deleterious effects of heat are clearly shown. Antityphoid vaccine sterilized by the addition of 0.5 per cent. carbolic acid retains its immunizing properties unimpaired for two years at least. This is proved (1) by the fact that animals and men treated with a two-year-old vaccine prepared by this method showed the same blood changes as did those treated with a fresh vaccine similarly prepared; and (2) by the fact that animals treated with a two-year-old vaccine prepared by this method withstand the same amount of a virulent typhoid culture when given intra-

peritoneally as do those treated with a fresh vaccine similarly prepared. Animals inoculated with antityphoid vaccine sterilized by the addition of 0.5 per cent. carbolic acid attain a higher degree of immunity than similar animals inoculated with a vaccine sterilized by heat (60 C. for 20 minutes or 53 C. for one hour) and the subsequent addition of an antiseptic. An antityphoid vaccine sterilized by heating for 20 minutes at a temperature of 60 C., and the subsequent addition of 0.5 per cent. carbolic acid has considerably deteriorated after being kept for two years.

22. **Family Hematuria.**—The seven cases reported by Aitkin are of one family which has been under his observation during the past seven years. So far as the history goes, the family is comprised in all of 17 persons, of whom 10 have suffered from hematuria. Testimony is conflicting as to whether the great-grandmother had hematuria or not. She died at an advanced age from "senile decay" with dropsy. The great-grandfather was healthy. Their only child, a daughter, had hematuria (according to relatives), married and had eight children (seven sons and one daughter), and died aged 38 years from Addison's disease. Four of her sons died in infancy from an unknown cause; and one, aged 14 years, from an indefinite "brain trouble." There is no evidence of any of those having suffered from hematuria. The remaining three are alive. The eldest son, aged 31 years, has not had hematuria, but his six children have all been hematuric; the second son, aged 28 years, has suffered from hematuria, and his only child, aged 2 years, is also hematuric; and the daughter, aged 23, unmarried, is also hematuric. There is no history of hemophilia, nor is there any rheumatic tendency in the family. It is interesting to note that in this family the hematuria has been inherited, first, through the female side, and then on two occasions through the male side, in one case the transmitting male not being affected.

Clinical Journal, London

July 21

27 Obstruction of the Large Intestine. A. A. Bowlby.
28 *Mitral Stenosis in Childhood. F. J. Poynton.
29 Treatment of Neurasthenia and the Relation of this Disease to Exophthalmic Goiter. T. D. Savill.

July 28

30 Family Jaundice. R. Hutchinson.
31 *Relationship Between Exophthalmic Goiter and Diabetes. G. R. Murray.

August 4

32 Rheumatoid Arthritis. W. P. Herringham.
33 *Popliteal Aneurism. H. M. Rigby.
34 Diseases of the Thyroid Gland. A. T. Davies.

28. **Mitral Stenosis in Childhood.**—The treatment of mitral stenosis in childhood is mainly the treatment of rheumatism. Warn the parents of the meaning of sore throats, fleeting pains, nervousness and chorea, feverishness and pallor. If possible get such children taken from damp, low-lying houses, and see that they are properly clothed and their extremities protected. Large unhealthy tonsils should be enucleated. Spring and autumn and particularly sudden damp cold after much heat, should be a signal for added watchfulness. Early symptoms should be promptly treated by rest and warmth, and the use of salicylate of soda.

31. **Exophthalmic Goiter and Diabetes.**—Murray's attention was drawn *to the relationship between the thyroid gland and* the pancreas by a group of four cases which came under his observation, in which exophthalmic goiter was accompanied or succeeded by a severe form of diabetes. One patient recovered from a typical attack of exophthalmic goiter, which was, however, followed by a severe form of pancreatic diabetes, to which she succumbed. The disappearance of the exophthalmic goiter was evidently due to the return of the thyroid to a normal condition, and is an interesting example of how complete this recovery of the gland may be. The diabetes was the result of the destruction of the islands of Langerhans. When a second patient first came under observation she was suffering from exophthalmic goiter without glucosuria, whereas three years later she had practically recovered from exophthalmic goiter, but was suffering from a severe form of diabetes. A third patient with exophthalmic goiter who apparently recovered relapsed on taking thyroid tablets, the second attack persisting and becoming complicated by the development of composite diabetes. The fourth case illustrates the development of diabetes nearly eleven years after the onset of exophthalmic goiter. In all these cases, one patient being a man and three women, severe diabetes developed at a variable interval after the disease had either subsided or decreasd considerably by the time the diabetes had declared itself.

33. **Popliteal Aneurism.**—Rigby reports two patients operated on by the obliterative method in which the results were all that could be desired.

Journal of Tropical Medicine and Hygiene, London

July 15

35 *Piroplasma Bigeminum.* A. R. Wellington.
36 Fasciolidæ in the Pancreas. R. B. Low.
37 *Cholera. R. W. Burkitt.

37. **Cholera.**—Elsewhere Burkitt emphasizes the great value of a large injection of morphin in cholera immediately the disease is suspected. He now reports a number of cases of bad collapses in all of which from 2 to 10 pints of saline solution were infused intravenously. The pulse instead of being quite impalpable, became full, strong and quiet, being at its acme by the time 3 pints had been infused, whereas twenty minutes previously the heart was beating at a rate of from 140 to 170, as recognized by the stethoscope. The face became fuller, and the awful sunken look to a large extent disappeared. Restlessness became less, the intelligence became brighter, the skin became warm. Burkitt suggests that the poison of cholera attacks principally, or perhaps only, the vasomotor system, that the heart is not at fault, that the abdominal veins are holding most of the blood in the body, and that the treatment in this condition should be that of shock. He further noticed in a number of cases that if persons sleep after an injection of ½ or ⅓ grain of morphin their chances of recovery are good; that morphin does not induce sleep in those patients who are badly collapsed, but only stops the diarrhea and vomiting.

Heart, London

July

38 *Irregularities of the Mammalian Heart Observed under Aconitin and on Electric Stimulation. A. R. Cushny.
39 *Nodal Bradycardia. J. Mackenzie.
40 *Paroxysmal Tachycardia. T. Lewis.
41 *Measurement of Systolic Pressure in Man. L. Hill.

38. **Irregularities of the Heart.**—Under aconitin many forms of irregularity of the heart occur, but most of these may be reduced to certain types. These, according to Cushny, are the following: (1) Reversed rhythm, in which the impulse to contraction is generated in the ventricle and spreads upward to the auricle; (2) impaired conduction through the auriculoventricular bundle which may lead to partial or complete block in either direction; (3) alteration in the strength of the contractions in auricle and ventricle; (4) extrasystoles in auricle or ventricle which sometimes occur at regular intervals (continuous bigeminus); (5) sudden changes in the rhythm of the whole heart. Two or more of these types may be present simultaneously. Aconitin has a greater tendency to cause pulsus alternans than most other poisons, and this is ascribed to its production of exhaustion and of delayed recuperation of contractility. Other drugs may induce alternans in the damaged heart by increasing its irritability, and thus make demands which the contractility is unable to meet. Other forms of irregularity were observed by Cushny in unpoisoned hearts under the influence of cold and electric stimulation and are described.

39. **Nodal Bradycardia.**—Mackenzie found that the heart's action may start continuously from a place other than the normal starting place, and in the resultant rhythm the auricular systole no longer precedes the ventricular. This abnormal rhythm is provisionally called "nodal rhythm." The rate of the "nodal rhythm" is usually more frequent than the normal rate. Mackenzie describes a form of nodal rhythm of *infrequent* rate. This form of bradycardia may arise suddenly in a heart previously showing the normal rhythm, or it may arise in a heart previously showing the nodal rhythm with a rate more frequent than the normal. It may be quite regular or may show premature beats, or it may be continuously irregular with a tendency to long pauses. While related to the

more common forms of nodal rhythm, it may occur in a patient with a slight heart block.

40. **Paroxysmal Tachycardia.**—Lewis reports in detail the findings in a case of paroxysmal tachycardia of the variety in which the auricle is responsible for the ventricular beat. He points out that two forms of paroxysmal tachycardia are encountered; in one the sequence of contraction of the cardiac chambers is normal; in the other the auricle fails to contract at the usual instant in the cycle. In the first, or auricular form of the affection, extrasystoles occur, but their nature is different from the beats of the paroxysm. The rhythm of the paroxysm is one *sui generis*. The evidence is, on the whole, opposed to the view that the paroxysm is to be regarded as the result of altered central innervation. It is more rationally ascribed to an intrinsic change in the heart itself. It is probable that the rhythm between the paroxysms is the normal rhythm of the heart, and that the rhythm of the paroxysm is present during the paroxysm alone. Paroxysmal tachycardia (of a ventricular form) was readily produced experimentally by Lewis by ligation of the right coronary artery, and in this condition the dog's ventricle may beat at a rate of 400 a minute. The ventricles contract first and their contraction is followed by the auricular systole. Vagal stimulation, when the heart is in this condition, as a rule, slows or stops the auricle, while the ventricular rhythm continues unaltered.

41. **Arterial Blood Pressure.**—Hill shows by experiments that in reading systolic pressures there are two factors to take into account: (1) The actual maximal pressure of the cardiac output; (2) the conductance of the pressure wave by the artery. The force of the wave is damped down in soft arteries, as sound waves are damped by velvet. Blood-pressure readings should be taken, therefore, under uniform conditions, with patients lying horizontally, not emotionally excited, not after exercise, not after taking hot food, tea, coffee or alcohol, not after the hand and wrist have been warmed or chilled. Comparatively synchronous readings of hand and foot arteries, the effect on the readings of oscillating the pressure up and down, and the effect of local heat gives information as to the state of the arteries, the value of which will grow with extended clinical observation.

Annales de Gynécologie et d'Obstétrique, Paris

July, XXXVI, No. VI, pp. 385-441

42 Abdominal Hysterectomy for Cancer of Uterus. H. Hartmann.
43 Primary Epithelioma of Fallopian Tube. (Epithélioma primitif de la trompe.) P. Lecène.

Archives Générales de Chirurgie, Paris

July 25, III, No. 7, pp. 661-770

44 *Anesthesia by the Rectum. F. Legueu, L. Morel and H. Verliac. Commenced in No. 6.
45 *Treatment c from the First. (Ostéomyélite arquis.
46 *Gonorrheal
47 *Bismuth I bismuthage des trajets fistuleux.) P. Mauclaire.

44. **General Anesthesia by Way of the Rectum.**—Legueu asserts that he has been able to eliminate the injurious factors in rectal etherization and states that its advantages are so great in operations on the face, mouth, neck and thorax that it deserves the preference in these cases. Irritation of the bowel, by the fumes of ether, can be avoided, he states, by blending the ether with oxygen, at body temperature, and preceding the application by a brief inhalation of ethyl bromid to relax the ileocecal valve. With this technic, general anesthesia by the way of the rectum is no more dangerous, he asserts, than by inhalation, unless the intestines are diseased. He uses a Y tube to convey the oxygen to the rectum, one branch conveying the oxygen alone, the other branch passing it through a flask of ether which thus mixes with the oxygen as it passes along, the two branches uniting in a single tube which conveys the mixture into the bowel. The oxygen and ether are rapidly absorbed by the bowel and there is no meteorism as when air is insufflated. He gives the details of experiments with 20 rabbits, 5 cats and 7 dogs to illustrate the harmlessness of this technic.

45. **Treatment of Osteomyelitis.**—Marquis calls attention to the panosteosis which inaugurates osteomyelitis chronic from the start, the Haversian canals, periosteal and medullary spaces all becoming ossified, without any acute stage. There is no necessity to sacrifice the limb; trephining will drain any possible collection of pus, and if the pain is not intense and if there are no signs of abscess or sequester it is best to temporize. The whole process may heal spontaneously, or if an abscess or sequester forms it can be treated as it develops. This form of chronic osteomyelitis is rare. He has found only a dozen cases on record besides the one he here records. The patient was a boy of 8, free from syphilis and tuberculosis, who began to limp, with some pain. The child was kept in bed for three months, but there was no improvement and the lower part of the femur became greatly enlarged, but without tenderness and with no symptoms on the part of the knee. The *x*-rays showed the compact tissue forming a cylinder nearly twice the circumference of the femur above. Treatment was restricted to rest; the patient is still under observation, but recovery occurred in the cases on record, with or without operative intervention.

46. **Gonorrheal Phlebitis.**—Zesas reports a case and commends immobilization in treatment, the limb being raised to control the edema. The patient was a man of 30 with chronic gonorrhea which had been rebellious to all measures for a year. The phlebitis developed suddenly after a long walk.

47. **Bismuth Paste for Fistulas.**—Mauclaire found the bismuth paste of the greatest use in defining the indications in a case of tuberculosis of the spine, and he commends it for all such cases when examination of the urine shows the integrity of the kidneys. This preliminary examination of the urine is especially necessary, he asserts, when there has been long suppuration.

Bulletin de l'Académie de Médecine, Paris

July 27, LXXIII, No. 30, pp. 81-134

48 Pyloric Stenosis from Aberrant Pancreatic Lobule. P. Reynier and Masson.
49 Case of Meningococcus Septicemia without Meningitis. A. Netter.
50 *Outcome of Serotherapy in Sixty-eight Cases of Cerebrospinal Meningitis. Id.

50. **Serotherapy of Epidemic Meningitis.**—Netter shows the great improvement that has followed the introduction of serotherapy of epidemic cerebrospinal meningitis, the reduced mortality and duration of the disease and the lesser proportion of persisting disturbances. In one case he made twenty-two intraspinal injections and one intravenous injection before the grave disease with its three relapses was conquered. Discovery of the meningococcus on lumbar puncture gave the signal for renewed injection each time. He is convinced that certain other patients might have been saved finally if the serotherapy had been kept up more perseveringly.

Lyon Médical, Lyons

XLI, No. 24, pp. 1201-1256

51 Use of Fat Substances in Dermatology: Indications, Combinations and Therapeutic Rôles. (Corps gras en dermatologie.) Carle. Commenced in No. 22.

No. 26, pp. 1317-1372

52 *Renal Tuberculosis Simulating Chronic Nephritis. (Tuberculose rénale fermée à forme de néphrite chronique.) L. Gallavardin and J. Rebattu.

No. 27, pp. 1-54

53 Moist Erythema in Alcoholics. L. M. Bonnet.
54 Peritonitis from Perforation of Cancer of the Rectum. A. Chalier.

No. 28, pp. 55-96

55 *Method of Opening into Ureter or Bladder through the Vagina without Risk of Fistula. Rochet.

No. 29, pp. 97-136

56 The Lineage and Internal Secretion of Connective Tissue Cells. (La lignée des cellules connectives et leur caractère spécifique majeur; l'activité sécrétoire rhagiocrine.) J. Renaut.
57 First Phases of Defense of Connective Tissue against Experimental Tuberculous Infection. (Les premiers stades de la defense du tissu conjonctif contre sa tuberculisation expérimentale.) J. Renaut and G. Dubreuil.

52. **Tuberculosis of the Kidney.**—In the two typical cases described the syndrome seemed to be that of ordinary Bright's disease in every respect, and nothing suggested the old tuberculous kidney lesions revealed by the autopsy. The "closed" tuberculous lesions, cheesy changes, etc., coexisted with diffuse and severe lesions of non-specific chronic nephritis. Gallavardin does not deny that an "open" tuberculous process in the kidney might spontaneously change into a "closed" lesion, but thinks it more probable that in these cases there is an autonomous

form of renal tuberculosis primarily and definitely "closed." The patients were men of 57 and 60.

55. **Method of Opening Bladder or Ureter Through the Vagina.**—Rochet has opened up the bladder or ureter in three cases by a simple vaginal technic which excludes the possibility of development of a fistula while it allows ample access for extraction of a calculus or for other intervention. About 1 cm. back of the mouth of the urethra and below, a transverse incision, about 3.5 cm. long, is made through the vaginal mucosa and through this alone. Then with a grooved sound the mucosa is worked free from the urethra above and then from the bladder. This mobilization of the mucosa is easily done, and it can then be pushed back to permit ample access to the bladder and ureter.

Presse Médicale, Paris

July 28, XVII, No. 60, pp. 537-544

58 Systematic Hyperesthesias and Allied Disturbances. F. Trémolières.

July 31, No. 61, pp. 545-552

59 Small Epidemic of Beriberi in French West Africa. Saltet and Legrand.
60 Sporotrichosis of Eyelids. (Sporotrichose palpébro-conjonctivale.) A. Cantonnet.
61 When to Administer Colchicum. A. Martinet.

August 4, No. 62, pp. 553-560

62 *Survival of Thyroidectomized Animals given Calcium or Magnesium. A. Frouin.
63 Malta Fever at Constantinople. Euthybule and Gabriélidês

62. **Survival of Animals After Removal of Entire Thyroid Apparatus.**—Frouin's extensive experimental research confirms the power of calcium and magnesium to neutralize the otherwise fatal effects of complete removal of the thyroid apparatus, as described in an editorial in The Journal, Jan. 30, 1909, page 388. He concludes that calcium salts have a promising future in treatment of thyroid insufficiency.

Revue de Chirurgie, Paris

August, XXIX, No. 8, pp. 253-412

64 *Rational Treatment of Fractures of the Base of the Skull E. Vincent.
65 *Partial Atrophy of the Optic Nerve in Fractures of Base of Skull. A. Cantonnet.
66 Indications and Operative Results in Abdominal Injuries from Small Bullets. (Plaies pénétrantes de l'abdomen par petits projectiles de guerre.) J. Poche.
67 *Tumors of the Spermatic Cord (Tumeurs du cordon spermatique.) M. Patel and A. Chalier. Commenced in No. 1.

64. **Fracture of Base of the Skull.**—Vincent is convinced that the only rational treatment of fracture of the base of the skull is to forestall the development of meningitic disturbances, opening a way for the escape of infectious agents and their toxic products, without waiting for them to make their influence felt on the meninges. In most cases the fracture communicates with the exterior by openings into the cavities in the face or the petrous bone, but attempts to disinfect by rinsing and spraying through these cavities have always proved ineffectual. After symptoms of meningitis have developed, it is then too late to arrest the fatal progress of the infectious accidents. Treatment should forestall them, and this is possible by trephining at once, leaving a permanent opening for the escape of the cerebrospinal fluid. There is thus no retention and no cultivation of the microbes in a closed cavity to enhance their virulence. Both microbes and toxins are eliminated as soon as they develop, and this is the rational treatment of all serous membranes when infection threatens or is installed. Repeated lumbar puncture is useful in aiding the elimination of the infectious products. Cushing's subtemporal trephining answers the same purpose as lumbar puncture, but has a more rapid and energetic action, although Cushing does not recommend it for more than the relief of compression. Vincent reports two cases in which it answered its purpose admirably. He trephined as near the fracture as possible, incising the dura mater to expose the surface of the brain over the entire extent of the opening in the bone, then introducing a drain down to the brain and suturing the skin around it. He kept up the drainage for about two weeks and the patient in his first case recovered without a sign of meningitis, although the tympanic membrane and Eustachian tube had been torn by the accident, as evidenced by the bleeding from both, and the fractured parts gaped considerably. The patient was a man of 60. The results at first were equally good in the second case, but lack of care later, after removal of the drain, permitted tardy infection after the patient was supposed to have been cured. In this case thirty hours had elapsed after the accident before the wound was taken care of. With the Cushing subtemporal decompressive technic the trephining is done in the temporal region, where the bone is thinnest; the temporal muscle is merely pushed aside, not severed. In case of rupture of the meningeal artery or one of its branches the extradural clot is reached at once and the artery can be easily ligated. In most cases of fracture of the base of the skull the point of the temporal and the base of the frontal lobe are most liable to be injured, and the subdural effusion resulting is most readily drained by this technic, as also the edema resulting from the contusion of the brain. In conclusion, he adds that this intervention reduces materially the number of complications, especially traumatic neuroses, which are so frequent in these cases of bursting fracture of the skull healing without operative intervention.

65. **Partial Atrophy of the Optic Nerve After Fracture of the Base of the Skull.**—Cantonnet states that in 268 cases on record the injury of the visual apparatus from fracture of the base of the skull involved the optic nerve close to or in the optic canal in all but 43 cases. The lesions were bilateral in 17 cases, and they entirely retrogressed in 6 of these and in 4 of the 208 unilateral cases. In 2 cases personally observed the atrophy was only partial on one side. The injury of the optic nerve is generally due to a fissure of the optic canal; vision, though totally lost at first, may gradually return. It is necessary to wait for some time before deciding as to the outcome; blindness coming on after the accident may subside partially or entirely in time, and, on the other hand, after an interval of normal vision blindness may become installed later. His first patient was a man of 60; after a fall from a horse unconsciousness for half an hour and blindness in the left eye with defective vision in the right were the only signs of fracture of the base of the skull. Vision gradually improved in the right eye by the end of a year and is now 1/6 normal. In the second case a physician hit the left orbit against a ladder; there was no unconsciousness, merely a little dizziness, but the eye was apparently totally blind thereafter for two weeks, after which vision in this eye began to improve and by the twenty-fifth day had recuperated all that was possible, and there has been no change since. The partial optic atrophy in this case affects only the maculary fibers, the peripheral fibers being still intact.

67. **Tumors of the Spermatic Cord.**—Patel and Chalier here conclude their long study of this subject with summaries of 110 cases.

Semaine Médicale, Paris

July 28, XXIX, No. 30, pp. 349-360

68 *Pupil Sign of Aortic Insufficiency: Circulatory Hippus. M. Landolfi.

August 4, No. 31, pp. 361-372

69 *Indications for Use of Electricity in Ileus. (Le lavement électrique dans l'iléus.) F. Lejars.

68. **Pupil Sign of Aortic Insufficiency.**—Landolfi announces that in pure aortic insufficiency, free from other valvular lesions and aneurism there is sometimes a true hippus, that is, the iris contracts and dilates synchronous with the heart beat, contracting with the systole and dilating with the diastole. He found this sign marked in one of the 24 patients with aortic insufficiency examined, and later was able to elicit it in three more after giving fifteen drops of digitalis a day for four days. It seems to be the equivalent of Corrigan's pulse and the other signs of aortic insufficiency, but, unlike them, it seems to be strictly limited to well-compensated, pure aortic insufficiency. It is merely an exaggeration of the physiologic cardiovascular hippus in the peripheral vessels and iris. The "circulatory hippus" was observed also in a dog with experimental aortic insufficiency, when heart stimulants were given.

69. **Electrical Treatment of Ileus.**—Lejars occasionally has witnessed good effects from application of electricity in ileus, and thinks that this method should be a routine measure in hospitals, at least. When the occlusion is incomplete, and the result of prolonged constipation, electricity, applied early, is

an important aid in treatment. But in occlusion from cancer it should be used with great caution. Complete ileus contraindicates more than a single test application of the electricity, the physician being ready to proceed with a laparotomy at need. Whenever there is a suspicion of appendicitis or peritonitis electrical treatment is strictly contraindicated and dangerous. Under other conditions, if applied gently, with a medium current and without too frequent interruptions, it is not dangerous in itself, but may become so if too prolonged or too often repeated. He refers especially to the method introduced by Boudet of Paris twenty years ago.

Archiv für Gynaekologie, Berlin

LXXXVIII, No. 3, pp. 417-618. Last indexed July 24, p. 330

70 *Operation for Uterine Prolapse. Heidenhain.
71 *Suprarenals and Sexual Characteristics. (Nebennieren und Geschlectscharakter.) Bortz.
72 *Operative Treatment of Extensive Hernia in Linea Alba. M. Henkel.
73 Intrauterine Trophoneurotic Skin Lesions. (Intrauterine trophoneurotische Hautaffectionen.) H. Sieber.
74 Tumor Formation in tl
aphrodites. (Zur K
den Keimdrüsen von
75 Prolonged Latency of
76 *Retrospect and Outloo
(Therapie des engen Beckens.) Scheffzek.
77 Organs that Support and Move the Uterus. (Zur Kenntniss der Befestigungs- und Bewegungsorgane des Uterus.) N. J. Macry.

70. Operation for Uterine Prolapse.—Heidenhain gives an illustrated description of the stretching apart of the cleft between the levator ani muscles in childbirth, of the resulting incompetency of the supporting floor of the pelvis, and the means to remedy it by closing up the stretched cleft to restore normal conditions.

71. Connection Between Suprarenals and Sexual Characteristics.—The case reported with illustrations by Bortz differs from others on record, as the patient was not a hermaphrodite, but an apparently normal girl of 16 who had been menstruating for a year. Menstruation suddenly ceased then and a full growth of beard and hair on the body followed, while the voice changed to a more masculine tone. Otherwise the girl was feminine in appearance. She soon succumbed to an intercurrent phlegmonous affection following several felons, and the suprarenals were found enlarged and degenerated, actual suprarenal struma in both, while the ovaries were atrophied.

72. Operative Treatment of Extensive Hernia of the Linea Alba.—Henkel remarks that the choice of an anesthetic is of great importance, as a tendency to vomit strains the wound too much; he prefers lumbar spinal anesthesia for the purpose. Good results are obtained with a technic which makes a thick pad over the linea alba where the tissues are liable to be very thin in old neglected cases of hernia at this point. He incises the skin and fat tissue horizontally and turns it back, above and below, to allow space for an oval incision through the fascia. The edges of this oval incision are then drawn together and sutured, pushing inside all the tissue between. The muscles are then drawn together and sutured, then the fascia and finally the transverse skin wound. He claims a number of advantages for this technic.

76. Retrospect and Outlook in Treatment of Contracted Pelvis.—This communication from the maternity at Breslau, of which Baum is director, reviews the experiences with 1,301 cases of contracted pelvis encountered among 11,126 parturients in ten years. Premature delivery was induced systematically in 23.9 per cent. of 1,011 cases of contracted pelvis; 54.2 per cent. of the women were spontaneously delivered at term; perforation was required in 1.2 per cent.; high forceps in 3.7 per cent.; Cesarean section in 1.7 per cent.; pubiotomy in 2.4 per cent. and prophylactic version was attempted only in 0.7 per cent. The mortality of the children was 18.8 per cent., including 20 children delivered spontaneously. Scheffzek discusses the indications and results, his final conclusions being that the general practitioner must be trained in methods of artificial premature delivery, prophylactic version and high forceps—and should be ready to apply them at need in the home when it is impossible for him to convince the parturient or the family that the ideal management of contracted pelvis is the expectant supervision possible in an institution with all in readiness for operative delivery if demanded. The former methods are not the ideal, but they are the best possible in the home, and give fairly good results.

Beiträge zur Geburtshilfe und Gynaekologie, Leipsic

XIV, No. 2, pp. 167-340. Last indexed July 31, p. 420

78 Arrested Development of Müllers Ducts. (Hemmungsbildungen der Müllerschen Gänge im Lichte der vergleichenden Anatomic E. Holzbach.
79 Rudir Ducts. (Zur Lehre von der ler Müllerschen Gänge.) O.
80 Case of Actinomycosis of the Female Sexual Organs; Twenty-third on Record. (Aktinomykose der weiblichen Geschlechtsorgane.) A. Hamm and R. Keller.
81 One Hundred and Fifteen Forceps Deliveries. (Ueber Zangenoperationen.) E. Kurihara.
82 Need and Incapacity for Breast Nursing. (Zur Frage der Stillungsnot und Stillungsunfähigkeit.) G. Bjelenky.
83 *Multiple Carcinomas. (Multiplizität der Karzinome.) T. Tsuji.
84 Behavior of the Uterine Mucosa with Myomas. (Verhalten der Uterusschleimhaut bei Myomen.) Y. Iwase.
85 *Cancer Statistics. (Zur Karzinomstatistik.) L. Seitz.

83. Multiple Carcinomas.—Tsuji reports the case of a woman of 58 with a carcinoma of the uterine cervix, a second at the mouth of the urethra and a third on the nostril. In connection with this case he reviews the cases of multiple carcinoma in the literature.

85. Permanent Cures of Cancer.—Seitz reports from Döderlein's clinic at Munich 1,044 cases of carcinoma during the last twenty years. The operability averaged only 20 per cent., and thus only 221 radical operations were performed. Only 3.8 per cent. of the 850 patients with carcinoma of the cervix and 30 per cent. of the 20 with carcinoma of the body of the uterus have been permanently cured. In the latter group 6 of the 10 patients operated on have been free from recurrence for more than 5 years. Only 8 have been permanently cured of the 46 radically operated on out of the 475 cases of carcinoma of the uterine cervix, and 24 of the 90 operated on of the 375 patients with carcinoma of the vaginal portion of the uterus. The permanent cures are thus 36 per cent. and the absolute cures 6.8 per cent. in this latter group, while in the cervix group the figures are 27 per cent. permanent cures and 1.75 per cent. absolute cures.

Berliner klinische Wochenschrift

August 2, XLVI, No. 31, pp. 1437-1476

86 Cripples in Germany. (Umfang und Art des jugendlichen Krüppeltums und der Krüppelfürsorge in Deutschland.) F. König.
87 Paralysis of the Shoulder and Arm with Cervical Ribs. (Einige ätiologisch interessante Fälle von Schulter-Armlähmung nebst Bemerkungen zur Pathologie der Halsrippen.) M. Bernhardt.
88 Improved Technic for the Cutaneous Tuberculin Reaction. (Zur Technik der v. Pirquet'schen Cutanreaktion.) A. Buschke and P. Kuttner.
89 Papillary Tuberculosis of Vaginal Portion of Uterine Cervix. K. Everling.
90 *Abdominal Manifestations with Beginning Pneumonia. B. Glaserfeld.
91 *Diabetic Lipemia. M. Adler.
92 *Low Intestinal Lesions. (Zur Diagnostik und Therapie der tiefsitzenden Dickdarmerkrankungen.) E. Rosenberg.
93 *Morbid Blushing. (Zur Psychologie und Therapie des krankhaften Errötens.) O. Aronsohn.
94 Stereoscopic Roentgen Lantern Slides. (Projektion von stereoskopische Röntgenbildern.) M. Levy-Dorn.

90. Abdominal Phenomena with Incipient Pneumonia.—Glaserfeld has encountered two cases in which the syndrome deceptively simulated appendicitis but in a few days the abdominal symptoms subsided as severe pneumonia became installed. In one of the cases there was an interval of nine days before the symptoms of pneumonia became manifest. In both these cases and in 13 of 21 reported by Bennecke the pneumonia terminated in an abscess or other serious complication. The necessity for differentiating these cases of "pneumogenic abdominal shock" from actual appendicitis is beyond question, as a useless appendicectomy would weaken the pneumonia patient. The most important points in differentiation are: (1) the expression of the face, which is not so distressed as in appendicitis; (2) the tongue, which is generally moist and not much coated; (3) the rapid breathing; (4) the rigidity of the abdominal wall, which is never so circumscribed as in beginning appendicitis; the abdomen is only superficially tender, deep pressure is not particularly painful; (5) careful objective examination of the chest, regardless of the assumed appendicitis. Differentiation may be rendered much more difficult by drugs previously given. In his first case the patient was subject to lead colic and opium was given at first, which masked the diagnosis for a time. It is probable that the pain caused by the inflammation in the lung is reflected into the abdomen. The irritation may even be transmitted through the sympathetic nervous system to the splanchnic nerves, inducing tympanites.

91. **Diabetic Lipemia.**—Adler reports two cases which show that the lipemia is due to cholesterin and not to lecithin.

92. **Diagnosis and Treatment of Rectal Lesions.**—Rosenberg has obtained excellent results in treatment of proctitis and sigmoiditis by application of a powder after thorough rinsing. The powder is a mixture of from 15 to 30 parts tannin to 100 parts magnesia usta, to which some disinfectant may be added. He insufflates the powder through a long tube commencing at the upper part and powdering downward. He also gives an illustrated description of an instrument for dilating strictures, spreading concentrically the 5 or 6 stout branches by a gradulated thumb screw.

93. **Morbid Blushing.**—Aronsohn has found that persons addicted to excessive blushing are diffident, anxious to appear different from what they really are, and that the tendency to morbid blushing can be overcome by urging them to be more natural and true. He has always been able to cure it by moral suasion supplemented by a little hypnotic suggestion to inspire the patient with courage and decision.

Centralblatt für die Grenzgebiete der Medizin und Chirurgie, Jena

July 30, XII, No. 13, pp. 481-528

95 *Latest Methods of Treating Inoperable Cancers. (Neuere Behandlungsmethoden bei inoperablen Krebsgeschwülsten.) K. H. Schirmer. Commenced in No. 8.
96 *Persistence of Thymus and Thymus Hyperplasia. C. Hart. Commenced in No. 9.

95. **Treatment of Inoperable Cancer.**—Schirmer reviews critically 245 articles in recent literature on the treatment of inoperable cancer, especially with radium, fulguration, serum (toxin) and trypsin. Czerny has applied fulguration in 59 cases and states that it accomplishes in half an hour more than Roentgen or radium treatment in three months. The wounds are very painful and sometimes the fulguration seems to stimulate the tumor to grow. He has never seen enlarged glands retrogress under its influence, and it has only a slight action at a distance. Moore's experiments have shown that scraps from a mouse tumor retain their vitality after immersion in liquefied air for from twenty to thirty minutes, thus resisting a temperature said to kill all germs and bacteria. This experience speaks against a parasitic origin of cancer. In order to obtain a correct opinion of the efficacy of the different methods of treating inoperable cancer, the experiences should be published with all details, body weight, blood picture, local details of the tumor, subjective findings, etc., with records of the duration, intervals and dosage of the measures used. The future seems to lie in a combination or mixture of the various measures, to attack the cancer from all sides, with local and general measures, internal and external. Podwyssotzki explains cancer as a battle between the younger and older cells, the younger devouring the older, and our aim should be to promote this autophagism for which he recommends potassium iodid, arsenic, alien serum, tuberculin and radium, to which list Schwartz adds the *x*-rays as one of the most effectual measures. In conclusion Schirmer calls attention to the central office at Berlin of the International Cancer Research Association which offers to supply data and information on request in regard to the experiences to date with any of the methods of treating cancer in vogue. One of the statutes of the association states that it is to be an international information bureau for all questions affecting cancer research.

96. **The Thymus.**—Hart concludes his critical review of 158 articles in recent literature on the anatomy, pathology and physiology of the thymus and records of cases of "thymus death," with the statements that the thymus must be regarded as an epithelial organ and probably as an organ with an internal secretion. It seems evident that an excess rather than a deficiency of thymus tissue and its metabolic products is injurious for the organism. It is possible, although not proved, that the death of new-born infants in asphyxia is "thymus death." The mechanical thymus death is usually due to a combination of several factors. The results of excessive thymus functioning are an autointoxication with a special harmful influence on the innervation of the heart which explains the sudden deaths in which the thymus is found much enlarged. The recent publications on the frequency of persisting large thymus in exophthalmic goiter *demonstrate that the thymus is an important injurious factor in these cases and explains the postoperative heart failure of patients with exophthalmic goiter.* The abnormally increased and perhaps perverted internal secretion of the persisting and enlarged thymus is responsible for the instability of the heart which causes it to break down at even slight extra demands on it. He is inclined to recommend surgical intervention in case of symptoms of "hyperthymization" without waiting for severe disturbances. Mere tracheotomy does no good; the gland must be partially or totally removed or space made for it by partial resection of the manubrium. Persistence and hyperplasia of the thymus are of the *greatest importance for the surgeon; the discovery of a persisting thymus in an adult should contraindicate general anesthesia, especially with chloroform.* Exophthalmic goiter should forbid any operation unless the thymus is previously removed. There does not seem to be much prospect of relief from Roentgen-ray exposures as they seem to act only on lymphadenoid tissue.

Deutsche medizinische Wochenschrift, Berlin

August 5, XXXV, No. 31, pp. 1337-1376

97 *Opsonins in Typhoid Bacillus-Carriers. (Opsoninuntersuchungen bei Typhusbazillenträgern.) W. Gaehtgens.
98 *Isolysin in Blood Serum with Cancer. (Vorkommen von Isolysinen im Blutserum bei malignen Tumoren.) H. L [illegible]
99 * [illegible] in Diagnosis of Gastric Ulcer and Ca[illegible] in der Diagnostik von Magengeschwür[illegible] [illegible] Grandauer.
100 * [illegible] Megacolon. (Beitrag zur Hirsch[illegible] [illegible] Sommer.
101 Healing under Fibrin and Serum Supplied from Without. S. Bergel.
102 Deep Roentgen-Ray Exposures. (Erfahrungen mit der Dessauerschen Röntgen-Tiefenbestrahlung.) Schüler.

97. **Opsonic Index in Typhoid Bacilli Carriers.**—Gaehtgens has found that the opsonic index returns to normal in a few months after typhoid, unless the persons become chronic bacilli-carriers, in which case the opsonic index persists high.

98. **Hemolysis with Special Reference to Cancer.**—Richartz reports negative findings in 112 normal individuals and in 103 with various bronchial, kidney, joint, gastrointestinal and other affections, syphilis and benign tumors, while in 73 cases of malignant tumors hemolysis was pronounced in 46 per cent., as also in 52 per cent. of 40 cases of tuberculosis. He compares his findings with those of Crile. *His conclusions are* that under certain circumstances hemolysis may be of differential importance for the diagnosis of gastrointestinal cancer. Benign stenosis, peptic ulcer, nervous dyspepsia and chronic gastritis are not accompanied by hemolysis. He regards the isolytic element in the serum as a reaction of the organism to the destruction of the red corpuscles by the toxic products of the cancer or tuberculosis.

99. **The "Remains Test" in Stomach Lesions.**—Grandauer has applied the principle of the food-remains test to detect ulceration or excessive secretion in the stomach. *In normal conditions the smooth surface of the stomach lining allows it to be* completely emptied, but when the surface is ulcerated or covered with tenacious mucus, particles cling to it. In order to test this he gives the patient at night 2 gm. (30 grs.) of bismuth. The next morning he takes a fat-zwieback test breakfast, and an hour later the stomach content is siphoned out; the stomach is then rinsed out with 100 c.c. of water, and then it is rinsed again until the fluid is completely clear. This test applied to 64 persons proved a reliable index for ulcer or severe catarrh, and in the absence of the latter sustained the assumption of gastric ulcer when large amounts of bismuth were found in the rinsing water. This pathologic retention of bismuth does not occur in the absence of ulcer except with pronounced catarrhal gastritis.

100. Congenital Megacolon.—Sommer's case was distinguished by the sudden onset of the signs of trouble which had remained comparatively latent until the age of 13. The results of the technic used commend it to others. An artificial anus was made into the cecum; two weeks later a median laparotomy disclosed the enormous sigmoid flexure. A small incision was then made into the left groin, through which the sigmoid loop was pushed and sutured to the abdominal wall. The median incision was then sutured, and two days later the sigmoid loop was resected. The preliminary bringing out of the loop proved an important aid for rapid healing after the resection.

Münchener medizinische Wochenschrift

July 27, LVI, No. 30, pp. 1521-1576

103 *Physiology of Milk Secretion. H. Cramer.
104 Changes in Character and Moods as Result of Arteriosclerosis. (Arteriosklerotische V ebcr.
105 The Cobra Venom Hemo und Holzmann angenomm von Geisteskranken auf di and A. Kronfeld. Id. (Much-Holzmannsche Psychoreaktion.) J. H. Schultz. Id. F. Plaut.
106 Ocular Reaction with elhrauch.
107 Suture of Recent Peri einigung der frischen Dammrisse. Klammern.) O. Betz.
108 T en. (Ueber Milztransplantationen.) in No. 29.
109 ic in 1523. (Aus Leipzigs medizinischer Vergangenheit.) K. Sudhoff.

August 3, No. 31, pp. 1577-1624

110 *Relations between the Lipoids and Action of Drugs. (Beziehung zwischen den Lipoiden und pharmakologischer Wirkung.) H. H. Meyer.
111 Has the Causal Agent of Trachoma been Discovered? (Ist der "Trachomerreger" entdeckt?) S. Rimpler.
112 Cholesteatoma at the Umbilicus. (Nabelcholesteatom.) H. Coenen.
113 Kinking of Sigmoid Flexure. (V-förmige Schlinge der Flexur.)
114 thritis. J. Heckmann.
115 Test. (Die Kobrareaktion.) W. Geissler.
116 Is Phrenocardia a Morbid Entity? (Ist die von Max Herz beschriebene "Phrenokardie" eine scharf abzugrenzende Form
117 Treatm and tels
118 Intrav Injel

103. Functional Independence of Mammary Glands and Stimulation of Function by Sucking.—Cramer ascribes great importance to sucking of the nipple as the main factor in setting up the mammary secretion, and reports a number of cases which confirm his assumption that the mammary gland is to a certain extent independent of the other organs of the genital apparatus and that it can be stimulated to secrete milk, even before the termination of the pregnancy, by letting a child suck the breast. There is certainly some factor in a pregnancy which inhibits the secretion of milk; even in twin births the milk does not "come" until after the birth of the second twin, although a considerable interval may elapse between the births. As it is so important for the new-born animal to have its mother's milk, Nature compels the already born to seek their food elsewhere as soon as the mother becomes gravid again. But at the same time systematic sucking will install the mammary secretion and counteract this inhibiting tendency. Mothers can leave their infants for weeks at a time and then be able to suckle them on their return. Cramer mentioned a case of the kind in which two three-week intermissions on account of operations did not interfere with resumption of the child's nursing on the mother's return home.

110. Relations Between Lecithin, Cholesterin and Other Lipoids and the Action of Drugs.—Meyer ascribes anesthesia to the physical change in the conditions of the cell lipoids. The lipoid-dissolving anesthetics cause a change in the entire makeup of the protoplasm. His communication, read at the recent International Congress for Applied Chemistry, presents evidence to sustain this view. It explains why the effects of anesthetics vanish as the unstable, reversible combination, dependent on the tension of the anesthetic, is broken up. It is thus evident that the cell lipoids are essential vital elements of the protoplasm.

Therapie der Gegenwart, Berlin

August, L, No. 8, pp. 361-408

119 *Disturbances from the Food in Breast-Fed Infants. (Ernährungsstörungen der Brustkinder.) H. Finkelstein.
120 Serous Expectoration after Puncture of Pleura. A. Wassmuth.
121 *Relations between Nose and Other Organs of the Body. (Beziehungen der Nase zu anderen Organen des Körpers.) B. Goldschmidt.
122 Direct Inspection of Pharyngeal Region. (Meso- und Hypopharyngoskopie.) F. Schilling.

119. Disturbances from the Milk in Breast-Fed Infants.—Finkelstein admits the possibility that a woman's milk might be toxic, but is convinced that this is the very rarest exception. He protests against the assumption current among the laity and some physicians that if a child is not thriving it is because the mother's milk is not good. In nearly every instance the indigestion ascribed to the composition of the milk is the result of an undersupply or, more frequently, to an oversupply. When this factor can be eliminated, if a child is not thriving on breast milk, there is some constitutional anomaly interfering with the proper digestion of the breast milk. The indigestion occurs entirely independent of the amount of milk ingested, and seems to be the result of a peculiarly irritable condition of the stomach, the manifestation of a neuropathic predisposition. All the children in the family are liable to display this same tendency to digestive disturbances on breast milk, and the history of the family generally contains records of tics, migraine, nervous headache, neurasthenia, hysteria, universal tendency to gastroptosis, enteroptosis, etc., or Stiller's universal asthenia. Examination of the infant will generally reveal some of these stigmata, and children who have dyspepsia on breast milk generally grow up lean and nervous, usually bright, but inclined to nervous dyspepsia, overexcitable vasomotor system, etc. He calls attention further to the fact that the stools may have an abnormal appearance while still the child is thriving. Determination of phosphates in the urine is a much more reliable sign of something wrong than the aspect and consistency of the stools, as the slightest disturbance in health is revealed by the appearance of phosphates in the urine. In practice, however, if the child is not being fed too little or too much, and its weight is duly increasing, the mother can be reassured even if the stools are abnormal. There is no need to torment the child with drugs or change to a wet-nurse—these first render actual the dreaded disturbance. The syndrome of indigestion in breast-fed infants corresponds to that in bottle-fed infants on mixtures containing considerable fat and sugar with little salt and casein. The neuropathic indigestion is generally observed early; if the child gets past the first weeks without it, there need be no fear of it later. When it develops it continues about the same for several weeks and then gradually improves or it may persist for a number of months. No drugs give any relief, but the dyspepsia of breast-fed infants is cured promptly when they are put on a mixture of cow's milk. The restless, crying, weakly infant begins to thrive at once after this change to cow's milk, the complete change in the gastric chemistry evidently providing better conditions for the oversensitive organ. In his practice he tries to ward off this resort to cow's milk as long as possible. Buttermilk, sweetened, or skim milk is the best substitute for a certain proportion of breast feeding, especially when the tendency is toward restlessness and colic. He is generally able to accomplish the desired result with three breast and three cow's milk feedings, even in the most serious cases, satisfied if the infant is sleeping well and increasing in weight, and paying no attention to the aspect and consistency of the stools. In his experience the children did not show marked progress until they were taking from 100 to 120 calories; some children required surprisingly large amounts on this mixed feeding. Whether this extra demand was due to the extra exercise of the restless children or to loss of energy from increased fermentation or was merely a peculiarity special to the existing constitutional anomaly, is a mystery. He has never found it necessary to wean the infant completely, although in two cases this was warded off only by a change of scene, the mother taking the infant into the country—another argument in favor of the nervous origin of the indigestion in these cases. He emphasizes the necessity for studying with special care all such cases of indigestion in breast-fed infants and the prompt and certain means of treating them, as otherwise the children are liable to be allowed to suffer needlessly, and confidence in the superiority of breast nursing may be shaken.

121. **Nerve Connections Between the Nose and Other Organs of the Body.**—Goldschmidt calls attention anew to the close connection between the nose and certain other organs, and relates a number of striking instances of complete cure—by cauterization of certain points in the nose—of pain in the stomach, genitalia, in regions innervated by the lower spinal nerves and in the head and face. His experiences confirm the assertions of Fliess in regard to the close relation between the nose and sexual organs, but he thinks that other organs are involved with equal frequency. He has not been able to find any special point in the nose connected with the various organs, but, as a rule, when relief follows application of cocain to any part of the nose, a permanent cure is obtained by cauterizing the spot with trichloracetic acid. He cites a number of instructive examples of each type. Nearly all the patients had applied merely for some nasal affection, and the discovery of the other trouble was a casual incident. In one case a woman of 30, being treated for a slight throat trouble, casually mentioned that she had had repeated gall-stone colics for seven years but had never passed any gall-stones and no treatment had been able to ward off the attacks which utterly prostrated her. He applied a cocain tampon to the outer end of the left middle turbinate during an attack and the pain was reduced in a few minutes. He cauterized the spot later and the patient was free from pain for a long time; then the colic recurred, on which he resected the part of the turbinate involved and also cocainized the outer end of both inferior turbinates and there has been no recurrence of the colic since. In another case a medical student, 28 years old, had suffered for ten years from vomiting, nausea and intense pain in the stomach after every meal, and had been under the treatment of many internists, in turn, without the slightest relief. After cocainization of the outer end of the middle turbinates the sensation of oppression in the stomach vanished. These points were then cauterized and the patient was told to eat anything he chose; notwithstanding a hearty diet there was no recurrence of pain or nausea until after the scab had dropped off, when the bone was resected and the outer end of the left inferior cauterized, since which there has been no further disturbance, the patient having been entirely cured for nearly two years. In another similar case the patient was not told that the little operation on the nose had anything to do with the stomach trouble, so that suggestion had nothing to do with the prompt and permanent cure. Cocainization of the nasal mucosa also proved effectual in curing subjective auditory and visual symptoms, and neuralgia in the face—the temporary breaking of the reflex arc evidently having a remarkably favorable influence on the disturbance. Migraine, he states, is of nasal origin in many cases, the progress of rhinology having explained it as a reflex from the nose. He warns that the nose is too important for heedless operations, while its intimate connection with so many vital organs deserves careful study.

Wiener klinische Wochenschrift, Vienna

August 5, XXII, No. 31, pp. 1091-1118

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124 *Palpation Signs of Enteroptotic Predisposition. (Palpatorisch bestimmbare abdominale Zeichen der asthenischen Konstitutionskrankheit Stillers.) T. Hausmann.
125 Behavior of Appendix i [illegible] halten des Wurmfortsatzes bei [illegible]
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135. New Technic for Hysterectomy for Cancer.—Zweifel found that peritonitis was responsible for the death in the large majority of the fatalities in the operations for uterine cancer at the Leipsic clinic, and consequently he has been devoting special attention to warding off this complication by complete exclusion of the uterus from the peritoneum. He ligates through an abdominal incision the ovarian and uterine arteries, separates the ureters, also the bladder and rectum from the vagina, leaving the vagina intact until after the two sheets of the pelvic peritoneum, in front of and back of the uterus, have been drawn together and sutured, thus roofing over the uterus. The abdominal wound is then temporarily sutured, completely closing the cavity of the peritoneum. The uterus is then removed through the vagina, the vaginal portion being drawn out until the vagina is inverted and the whole uterus is then removed with the vagina. The only objection to this technic is the necessity to change from the Trendelenburg position to the horizontal; the only bleeding that can occur is from the vaginal artery, which is easily controlled. He reports the case which led to the development of this technic, a very large myoma complicating the carcinoma. The myoma was so large that he had to use a piece of pig bladder to patch the roof of the peritoneum over the uterus; in future he would use rubber tissue for this purpose as the bladder was fetid when expelled. But nothing of the kind is required in ordinary cases. He has treated twenty-four patients by this technic and the surprisingly smooth afebrile convalescence, without a sign of peritonitis, has confirmed the value of this method.

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141. Epidemic Resembling Typhoid.—Dell 'Oro reports a small epidemic in which the disease seemed to be typhoid from the clinical manifestations, but the bacteriologic and agglutination tests were constantly negative and the convalescence was unusually brief.

142. Influence of the Parathyroids on Fractures.—Canal's experiments showed that fractures healed very slowly in animals after removal of all or part of the parathyroids. The results indicate that the parathyroids have an important influence on the processes of ossification in healing of fractures. His findings sustain the statements of MacCallum in regard to the influence of the parathyroids on lime metabolism.

143. Abdominal Inflammation Simulating a Malignant Tumor.—Cassanello has encountered several cases of apparent cancer in the gastrointestinal tract, but operation revealed merely inflammatory infiltration, and the modifications induced by the laparotomy were followed by the complete subsidence of the tumor. By analyzing his own cases and those in the literature he finds that these inflammatory tumors spread and involve the surrounding organs to a much larger extent than a malignant tumor, so that this lack of clinical individuality, the involvement of several organs, speaks against the cancerous nature of the lesion. In one of his cases the hard woody mass included the stomach, omentum, liver and part of the abdominal wall. The lack of marked outlines and the confused objective findings distinguish these inflammatory tumors; they simulate but do not reproduce the symptomatology and objective signs and course of true neoplasms, and incision of the abdomen is generally followed by the vanishing of these apparently serious disturbances.

Riforma Medica, Naples

August 2, XXV, No. 31, pp. 841-868

144 *Immunity and Immunization against Tuberculosis. E. Maragliano.
145 Transformation of *Staphylococcus pyogenes aureus* into *Staphylococcus pyogenes albus* in Intravenous Inoculations. F. Stinelli.
146 Different Technics for Experimental Research on Effects of Tobacco Smoke. (Studio sperimentale degli effetti del fumo di tabacco.) A. Bosi.
147 Arteriosclerosis and Heart Affections of Industrial Origin. (Arteriosclerosi e cardiopatie da lavoro.) P. Boveri.

144. Immunization to Tuberculosis.—Maragliano claims priority for immunization against tuberculosis, having immunized animals in 1895 and having now a group of patients vaccinated against tuberculosis seven years ago. He here describes the history of immunization against tuberculosis and the various technics followed and urges vaccination on a large scale of persons peculiarly exposed to tuberculous infection. The vaccine is easily made and harmless. None of those vaccinated seven years have shown signs of tuberculosis since, and he is convinced that this personal prophylaxis is the true secret of an effectual campaign against tuberculosis. It should rank with vaccination against smallpox. His technic was described in THE JOURNAL, April 2, 1904, page 933, and Dec. 8, 1906, page 1965.

Hospitalstidende, Copenhagen

June 9, LII, No. 23, pp. 705-736

148 Differentiation of Ovarian Cyst from Pregnancy. (Til Belysning af Vanskelighederne ved Differentialdiagnosen mellem Ovariecyste og Graviditet.) H. v. Thun.
149 *Preservation of Instruments from Rust. (Steril Opbevaring af Instrumenter.) P. Videbech.

June 16, No. 24, pp. 737-776

150 Electrolytic Scarification for Acne Rosacea. P. Videbech.
151 Case of Pseudotumor in the Brain. (Pseudotumor cerebri.) G. E. Schroder.

June 30, No. 26, pp. 809-840

152 *Two Cases of Juvenile Paretic Dementia. G. Neve.
153 Case of Congenital Heart Defect with Cyanosis and Polycythemia. (Tilfaelde af medfødt Hjertefejl med Cyanose og Polyglobuli.) V. Bie and V. Maar.

July 7, No. 27, pp. 841-872

154 Sensibility to Light of Albuminoid Substances. (Undersøgelser vedrørende albuminoide Stoffers Lysfølsomhed.) A. Meisling.

July 14, No. 28, pp. 873-896

155 Tonic Accommodation Reaction of Sluggish Pupil. (Om tonisk Akkomodationsreaktion af lysstive Pupiller.) H. Rönne.

149. To Keep Instruments from Rusting.—Videbech has been using for five years a mixture of crude carbolic acid and ordinary potash soap, equal parts, in a 3 per cent. solution, to prevent instruments from rusting. He has found also that one or two glass dishes filled with calcium chlorid attract any moisture in the case where instruments are kept. He does not rely on the carbolic-acid solution alone for disinfection, but boils the instruments in it and then keeps them in it.

152. Juvenile Paretic Dementia.—Neve reports the clinical and postmortem findings in two cases, discussing the etiology.

121. Nerve Connections Between the Nose and Other Organs of the Body.—Goldschmidt calls attention anew to the close connection between the nose and certain other organs, and relates a number of striking instances of complete cure—by cauterization of certain points in the nose—of pain in the stomach, genitalia, in regions innervated by the lower spinal nerves and in the head and face. His experiences confirm the assertions of Fliess in regard to the close relation between the nose and sexual organs, but he thinks that other organs are involved with equal frequency. He has not been able to find any special point in the nose connected with the various organs, but, as a rule, when relief follows application of cocain to any part of the nose, a permanent cure is obtained by cauterizing the spot with trichloracetic acid. He cites a number of instructive examples of each type. Nearly all the patients had applied merely for some nasal affection, and the discovery of the other trouble was a casual incident. In one case a woman of 30, being treated for a slight throat trouble, casually mentioned that she had had repeated gall-stone colics for seven years but had never passed any gall-stones and no treatment had been able to ward off the attacks which utterly prostrated her. He applied a cocain tampon to the outer end of the left middle turbinate during an attack and the pain was reduced in a few minutes. He cauterized the spot later and the patient was free from pain for a long time; then the colic recurred, on which he resected the part of the turbinate involved and also cocainized the outer end of both inferior turbinates and there has been no recurrence of the colic since. In another case a medical student, 28 years old, had suffered for ten years from vomiting, nausea and intense pain in the stomach after every meal, and had been under the treatment of many internists, in turn, without the slightest relief. After cocainization of the outer end of the middle turbinates the sensation of oppression in the stomach vanished. These points were then cauterized and the patient was told to eat anything he chose; notwithstanding a hearty diet there was no recurrence of pain or nausea until after the scab had dropped off, when the bone was resected and the outer end of the left inferior cauterized, since which there has been no further disturbance, the patient having been entirely cured for nearly two years. In another similar case the patient was not told that the little operation on the nose had anything to do with the stomach trouble, so that suggestion had nothing to do with the prompt and permanent cure. Cocainization of the nasal mucosa also proved effectual in curing subjective auditory and visual symptoms, and neuralgia in the face—the temporary breaking of the reflex arc evidently having a remarkably favorable influence on the disturbance. Migraine, he states, is of nasal origin in many cases, the progress of rhinology having explained it as a reflex from the nose. He warns that the nose is too important for heedless operations, while its intimate connection with so many vital organs deserves careful study.

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143 *Abdor [illegible] ting Cancer. (Pseudo-neopla[illegible] simulanti tumori maligni.) R.

140. **Thyroid Origin of Scleroderma.**—Pedrazzini reports five cases of scleroderma in four of which the thyroid was small and atrophied, while in the other the thyroid was large and hard. Thyroid treatment gave good results in the two in which it was applied, commencing with small and progressive doses. None of the patients presented signs of nervous changes suggesting a trophic origin, but everything confirmed the assumption of some connection between the cutaneous affection and the thyroid gland.

141. **Epidemic Resembling Typhoid.**—Dell 'Oro reports a small epidemic in which the disease seemed to be typhoid from the clinical manifestations, but the bacteriologic and agglutination tests were constantly negative and the convalescence was unusually brief.

142. **Influence of the Parathyroids on Fractures.**—Canal's experiments showed that fractures healed very slowly in animals after removal of all or part of the parathyroids. The results indicate that the parathyroids have an important influence on the processes of ossification in healing of fractures. His findings sustain the statements of MacCallum in regard to the influence of the parathyroids on lime metabolism.

143. **Abdominal Inflammation Simulating a Malignant Tumor.**—Cassanello has encountered several cases of apparent cancer in the gastrointestinal tract, but operation revealed merely inflammatory infiltration, and the modifications induced by the laparotomy were followed by the complete subsidence of the tumor. By analyzing his own cases and those in the literature he finds that these inflammatory tumors spread and involve the surrounding organs to a much larger extent than a malignant tumor, so that this lack of clinical individuality, the involvement of several organs, speaks against the cancerous nature of the lesion. In one of his cases the hard woody mass included the stomach, omentum, liver and part of the abdominal wall. The lack of marked outlines and the confused objective findings distinguish these inflammatory tumors; they simulate but do not reproduce the symptomatology and objective signs and course of true neoplasms, and incision of the abdomen is generally followed by the vanishing of these apparently serious disturbances.

Riforma Medica, Naples

August 2, XXV, No. 31, pp. 841-868

144 *Immunity and Immunization against Tuberculosis. E. Maragliano.
145 Transformation of *Staphylococcus pyogenes aureus* into *Staphylococcus pyogenes albus* in Intravenous Inoculations. F. Stinelli.
146 Different Technics for Experimental Research on Effects of Tobacco Smoke. (Studio sperimentale degli effetti del fumo di tabacco.) A. Bosi.
147 Arteriosclerosis and Heart Affections of Industrial Origin. (Arteriosclerosi e cardiopatie da lavoro.) P. Boveri.

144. **Immunization to Tuberculosis.**—Maragliano claims priority for immunization against tuberculosis, having immunized animals in 1895 and having now a group of patients vaccinated against tuberculosis seven years ago. He here describes the history of immunization against tuberculosis and the various technics followed and urges vaccination on a large scale of persons peculiarly exposed to tuberculous infection. The vaccine is easily made and harmless. None of those vaccinated seven years have shown signs of tuberculosis since, and he is convinced that this personal prophylaxis is the true secret' of an effectual campaign against tuberculosis. It should rank with vaccination against smallpox. His technic was described in THE JOURNAL, April 2, 1904, page 933, and Dec. 8, 1906, page 1965.

Hospitalstidende, Copenhagen

June 9, LII, No. 23, pp. 705-736

148 Differentiation of Ovarian Cyst from Pregnancy. (Til Belysning af Vanskelighederne ved Differentialdiagnosen mellem Ovariecyste og Graviditet.) H. v. Thun.
149 *Preservation of Instruments from Rust. (Steril Opbevaring af Instrumenter.) P. Videbech.

June 16, No. 24, pp. 737-776

150 Electrolytic Scarification for Acne Rosacea. P. Videbech.
151 Case of Pseudotumor in the Brain. (Pseudotumor cerebri.) G. E. Schroder.

June 30, No. 26, pp. 809-840

152 *Two Cases of Juvenile Paretic Dementia. G. Neve.
153 Case of Congenital Heart Defect with Cyanosis and Polycythemia. (Tilfaelde af medfødt Hjertefejl med Cyanose og Polyglobuli.) V. Bie and V. Maar.

July 7, No. 27, pp. 841-872

154 Sensibility to Light of Albuminoid Substances. (Undersøgelser vedrørende albuminoide Stoffers Lysfølsomhed.) A. Meisling.

July 14, No. 28, pp. 873-896

155 Tonic Accommodation Reaction of Sluggish Pupil. (Om tonisk Akkomodationsreaktion af lysstive Pupiller.) H. Rönne.

149. **To Keep Instruments from Rusting.**—Videbech has been using for five years a mixture of crude carbolic acid and ordinary potash soap, equal parts, in a 3 per cent. solution, to prevent instruments from rusting. He has found also that one or two glass dishes filled with calcium chlorid attract any moisture in the case where instruments are kept. He does not rely on the carbolic-acid solution alone for disinfection but boils the instruments in it and then keeps them in it.

152. **Juvenile Paretic Dementia.**—Neve reports the clini- and postmortem findings in two cases, discussing the etiology

In one case the Wassermann reaction was positive in the serum and spinal fluid, although there was nothing to indicate syphilis in the history.

Norsk Magazin for Lægevidenskaben, Christiania

August, LXX, No. 8, pp. 665-768

156 *Free Bone Plastic Operation for Pseudarthrosis of the Neck of the Femur. (Pseudarthrose i collum femoris behandelt med fri benplastik.) H. Wille.
157 *Two Hundred and Seventy-five Cases of Eclampsia. J. Horn.
158 Otogenic Sinus Phlebitis and Thrombosis. Prognosis, Prophylaxis and Treatment. (Den otogene pyæmi, sinusflebit og sinusthrombose, med hensyn til prognose og behandling.) V. Uchermann.
159 Operative Treatment of Glaucoma. J. Borthen.

156. **Treatment of Pseudarthrosis with a Bone Peg.**—Wille cut a peg six inches long and about the size of the little finger, from the tibia, with its periosteum. This peg was driven into the neck of the femur after fracture of the neck which refused to heal under the ordinary measures. The hole was bored for the peg with an electric motor, the peg driven in and a plaster cast applied, and the patient has been cured of all disturbances since, although he still limps slightly.

157. **Two Hundred and Seventy-five Cases of Eclampsia.**—Horn reviews the experience of twenty years with eclampsia, comparing the outcome under different methods of treatment. Since more active measures have been introduced, the mortality of both mother and children has been reduced by one-half. He tabulates the details of 14 cases; the 10 treated by vaginal Cesarean section are to be discussed later.

Ugeskrift for Læger, Copenhagen

July 8, LXXI, No. 27, pp. 751-788

160 *Standardization of Drugs, Etc. (Om Standardisering af Lægemidler.) A. Erlandsen.

July 15, No. 28, pp. 789-812

161 Experiences with Sixty Gall-stone Operations. (Galdesttenssygdommens kirurgiske Behandling.) E. Müller.

July 29, No. 29, pp. 813-840

162 *The Danish-French Leprosy Expedition. (Den dansk-franske [illegible] E. Ehlers.
163 [illegible] (Om Kaffe, Kaffesurrogater og kof-aber.

160. **Standardization of Drugs.**—Erlandsen reviews what has been done in this line in various countries in regard to ergot, digitalis and suprarenal preparations.

162. **The Danish-French Leprosy Expedition.**—Ehlers was the leader and was accompanied by one Danish and two French experts. Before starting, at Metchnikoff's suggestion, they spent two months at the Pasteur institute at Paris where several lepers were under treatment and volunteered as subjects for experiments, among them a medical student from Haiti with a peculiarly malignant form of leprosy. The special aim of the expedition was to determine whether insects are involved in the transmission of leprosy. Their findings all indicate that this is not the case. Even when they punctured a nodule and sucked the blood into the pipette with the mouth—a new method aiming to imitate the bite of an insect—and found numbers of bacilli in the fluid, insects biting the same person merely took up pure blood. The blood-sucking insects, he says, merely *suck blood*; they do not introduce a poison, like bees. The experiments were made on 50 lepers in the Danish West Indies, and the Wassermann test gave constantly positive findings in all patients with nodular leprosy, while the reaction was vague or negative in the anesthetic form and in the stationary and cured cases. The expedition regards this test as destined to prove as important in leprosy as it has been found in syphilis. *Turpentine fixation* abscesses gave negative results, and no signs of leprosy were found in 160 rats examined. A casual finding was the discovery of *Filiaria sanguinis hominis* in the stomachs of body-lice. The chief expenses of the expedition were borne by the Danish engineer, Davidsen, at Paris; the French government this [illegible] the expenses of one member; the transportation com-tional ast[illegible]arried them all free of charge. floating tent[illegible]way home Ehlers stopped at Porto Rico and states advocates rejec[illegible]s that leprosy there is much more common than military service; [illegible]nized. He mentions in conclusion that he was similar stigmata. [illegible]shington, on his arrival in New York, to tes-[illegible]xpert in the case of a man (Early) who was suing the authorities for damages for unwarranted incarceration, as compulsory isolation had been imposed on the assumption that he was a leper. After careful examination Ehlers thought that the man really was afflicted with leprosy, contracted in the Philippines. [This case has been mentioned in The Journal, and an account of it appears in the September *Munsey*. The patient is now under observation at the New York Skin and Cancer Hospital, but not under restraint.—Ed.]

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

Université de Toulouse: Année Scolaire 1907-1908: Rapport Annuel du Conseil de l'Université (6 Janvier 1909). Comptes Rendus des Travaux des Facultés et des Observatoires. Rapports sur les Concours Lus au Conseil de l'Université le 6 Décembre, 1908. Paper. Pp. 165. Toulouse: Imprimerie et Librairie Edouard Privat, *Libraire de l'Université, 14 Rue des Arts, 1909.*

An Inquiry Concerning the Etiology of Beriberi. By Henry Fraser, M.D. (Aber.), Director, Institute for Medical Research, and A. T. Stanton, M.D., Bacteriologist, Institute for Medical Research. Studies from the Institute for Medical Research, Federated Malay States, No. 10. Paper. Pp. 24, with illustrations. Price, 3 shillings 6 pence net. Singapore: Kelly and Walsh, Limited, Printers, 1909.

American Practice of Surgery. A Complete System of the Science and Art of Surgery, by Representative Surgeons of the United States and Canada. Edited by Joseph D. Bryant, M.D., LL.D., and Albert H. Buck, M.D. Complete in Eight Volumes. Volume VI. Cloth. Pp. 916, with 624 text illustrations, and 39 plates. Price, $7. New York: William Wood & Co., 1909.

Modern Problems in Psychiatry. By Ernesto Lugaro, Professor of Neuropathology and Psychiatry in the University of Modena. Translated by David Orr, M.D., and R. G. Rows, M.D. Publications of the University of Manchester, Medical Series, No. XII. Cloth. Pp. 305, with illustrations. Price, 7 shillings 6 pence net. Manchester: University Press (Sherratt and Hughes), 1909.

Studies on Leprosy. IV. The Utility of the Examination of the Nose and the Nasal Secretions for the Detection of Incipient Cases of Leprosy. By Walter R. Brinckerhoff, S.B., M.D., Director Leprosy Investigating Station, Public Health and Marine-Hospital Service and W. L. Moore, M.D., of Honolulu, Hawaii. Paper. Pp. 29. Washington: Government Printing Office, 1909.

The Harvey Lectures. Delivered under the Auspices of the Harvey Society of New York, 1907-08. By Professors Edwin O. Jordan, James Ewing, David L. Edsall, Ernest H. Starling, George Crile, Joseph Jastrow, Otto Folin, Ross G. Harrison, E. A. Schäfer and Alonzo E. Taylor. Cloth. Pp. 266. Price, $3. Philadelphia: J. B. Lippincott Co., 1909.

Manual of Chemistry. By W. Simon, Ph.D., M.D., Professor of Chemistry in the College of Physicians and Surgeons of Baltimore, and Daniel Base, Ph.D., Professor of Chemistry in the Maryland College of Pharmacy. Ninth Edition. Cloth. Pp. 714, with 87 illustrations, 9 colored. Price, $3 net. Philadelphia: Lea and Febiger, 1909.

The Principles of Bacteriology. By A. C. Abbott, M.D., Professor [illegible] nd Director of the Laboratory of [illegible] ylvania. Eighth Edition. Cloth. P[illegible] 26 colored. Price, $2.75 net. Philadelphia: Lea and Febiger, 1909.

Obstetrics. A Manual for Student [illegible] David James Evans, M.D., *Lecturer on* [illegible] Infancy, McGill University, Montreal, [illegible] Cloth. Pp. 440, with 172 illustrations. [illegible] delphia: Lea and Febiger, 1909.

A Text-Book on Physiologic Chemistry. By John H. Long, M.S., Sc.D., Professor of Chemistry in Northwestern University Medical School, Chicago. Second Edition. Cloth. Pp. 396, with 42 illustrations. Price, $2.50 net. Philadelphia: P. Blakiston's Son and Co., 1909.

Sprains and Allied Injuries of Joints. By R. H. Anglin Whitelocke, M.D., M.C., F.R.C.S., Honorary Surgeon to the Radcliffe Infirmary and County Hospital at Oxford. Cloth. Pp. 241, with 65 illustrations. Price, $3. New York: Oxford University Press, 1909.

Immunity and Specific Therapy. By W. D'Este Emery, M.D., B.Sc., Clinical Pathologist to King's College Hospital and Pathologist to the Children's Hospital, Paddington Green. Cloth. Pp. 448, with illustrations. Price, $3.50 net. New York: Paul B. Hoeber, 1909.

Naval Hygiene. By James Duncan Gatewood, M.D., Instructor in Naval Hygiene, United States Naval Medical School, Washington. Cloth. Pp. 779, with 113 illustrations, 8 colored. Price, $6 net. Philadelphia: P. Blakiston's Son & Co., 1909.

Physical Diagnosis. By Richard C. Cabot, M.D., Assistant Professor of Medicine in Harvard University. Fourth Edition. Cloth. Pp. 579, with 245 illustrations. Price, $3 net. New York: William Wood & Co., 1909.

Protozoology. By Gary N. Calkins, Ph.D., Professor of Protozoology in Columbia University, New York. Cloth. Pp. 341, with 129 illustrations, 4 colored. Price, $3.25 net. Philadelphia: Lea and Febiger, 1909.

The Ohio Association of Medical Teachers. Transactions of the Fourth Annual Meeting. Including Constitution and By-Laws. Paper. Pp. 29.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

VOLUME LIII CHICAGO, ILLINOIS, SEPTEMBER 18, 1909 NUMBER 12

Original Articles

THE RELATION BETWEEN THE SCIENCE AND THE ART OF INFANT FEEDING *

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NEW YORK

During the past few years there has been much discussion in reference to scientific infant feeding. On closely examining the points discussed, however, it will be found that little attention has really been paid to the science of infant feeding, as almost all the efforts have rather been directed to the art of infant feeding. The science of infant feeding consists in knowing why certain things should be done, or not done, and the effects of different procedures. The art of infant feeding comprises the methods employed in preparing food and administering it. Most of the articles concerning infant feeding have related to methods of making foods acceptable to infants, and many diverse methods have been proposed. As infants have been found who have thriven, to a certain extent, on all of the different methods that have been advocated, it is evident that there has been something in common possessed by all of them.

The reason that every method of infant feeding can be shown to have been occasionally successful is that all of the foods contained more or less proteins, mineral matter, fats and carbohydrates, without which no infant can live or grow. Various infants will thrive on some foods better than on others, owing to the fact that the food elements are present in more suitable quantities and forms. The form of a food element has an important effect on its usefulness, and a large part of successful, practical feeding consists in changing or adapting the form of the food elements to suit different infants, for they are not alike in their capacity for digesting and assimilating even the same forms of food elements.

It is self-evident that the infant belongs to the animal kingdom and is accordingly subject to the general laws of animal nutrition.

It is also evident that the infant is still in the last stages of embryonic development while normally at the breast, and that its digestive organs are not adapted for ordinary food. All young mammals are in this condition for some time after birth and it is found that the food supplied by the mother has the property of changing its physical form when it comes in contact with the gastric secretions of the young. The food assumes a more or less solid form in the stomach, and the character of this solid differs as the stomachs of the young animals differ, rather than according to the composition of the food. The composition of the food supplied by the mothers of various species of young animals varies according to the rate of growth of the young, the milk supplied to rapidly growing young animals containing *more protein than that furnished to those whose growth* is less rapid.

In reference to the infant's nutrition, we have always to deal with milk in some form, as biology shows that this is always the primary and elemental food mixture, containing in easily assimilable form all the food principles. While the different manipulations required to make various milks, or other forms of food, acceptable to the infant's stomach constitute the art of infant feeding, before any of these details can be accepted as scientific and thus of permanent utility, it must be decided how far they are in accordance with biologic laws. Biology must thus finally decide both the possibilities and limitations of every method that is advanced. This will call for a knowledge of the structure and functions of the various digestive tracts in connection with the peculiar characteristics of the milk early furnished to each species. This study will show not only how far different milks are interchangeable, but also throw light on the various manipulations that aim to make them so.

A chemical analysis of milk will show the ingredients of this fluid, and, to a certain extent, their potential food values from their quantitative amount. There is something beyond this, however, that chemistry can not explain. While the fats and carbohydrates in their composition and reaction to the digestive secretions are a good deal alike in different milks, the proteins are essentially different. Chemistry alone can not explain this phenomenon. We must study the reaction of the protein to the digestive secretions, and then examine such reactions in relation to the growth and development of the digestive tract—in other words, investigate the question biologically before we can understand the problem. A certain portion of the protein of all milks coagulates on coming in contact with rennin or rennin and acid, but the manner and extent of this coagulation stands in a direct relation to the proper evolution of the digestive tract of the animal.

While there are many grades of coagulability in the milks of different animals, for practical purposes, we may distinguish three of these grades and consider their significance. The protein may coagulate in a solid, gelatinous or flocculent manner. In the ruminant, herbivorous animals, such as the cow, sheep or goat, the protein coagulates in solid, tough masses that can not readily leave the stomach. In these animals, digestion is always largely gastric and the stomach forms 70 per cent. of the digestive tract. Later, this stomach will be called on largely to digest tough, stringy masses of hay and straw and the previous exercise on the tough curds of the milk develops it for this future work. In the non-ruminant herbivora, such as the mare and ass, the protein coagulates in gelatinous masses that can easily leave the stomach. The reason for passing the curds quickly along is, that in this class of animals digestion is largely intestinal, and the intestines form about 90 per cent. of the digestive tract. Later, grain and grasses must be largely digested in the intestinal portion of the tube, and hence the curd is here also especially adapted to develop the intestinal tract for its future work. In human milk, the curd is thrown down in flocculent masses—a form intermediate between the solid and gelatinous types of curd previously noted. While digestion begins in the stomach it is largely carried on and completed in the intestine, and the stomach forms about 20 per cent. of the digestive tract. The curd is thus adapted to start the development and motility of the stomach and finishes by instituting these functions in the bowel which is destined to play a predominant part in digestion. Here again the curd, so far as the form is concerned, furnishes an analogue and precursor of the future food of the infant. The curd forms small, flocculent masses, and the future food must be separated later into small masses by chewing before digestion can take place to the best advantage.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

We have thus seen that the milk of herbivorous animals whose digestion is principally gastric forms solid curds which can not easily leave the stomach; that the milk of herbivorous animals whose digestion is principally intestinal forms gelatinous curds which easily leave the stomach and pass into the intestines; and that women's milk, which is intended for a digestive system in which gastric digestion is more than that of the horse or ass, but not so great as the cow or goat, curds in flakes that stand between the other two types of curds.

Biologic science thus shows us that, while a certain amount of protein is present in the milk of all animals, and is necessary for tissue building and growth, this protein must not only be coagulable, but must curd in a certain specific way in each species of animal. The protein is thus the least readily interchangeable of the ingredients of the milks of different species. In this way, science teaches that the protein must not be thrown into a soluble form or so altered as not to react normally to the digestive secretions if we would have healthy growth. We must always remember that the protein has a developmental as well as nutritive function to perform. While immediate nutrition is of great importance to the growing infant, we must not, by putting all food in a soluble form for quick absorption, neglect to give proper work for the secretions and musculature of the digestive tract. It is only by the latter method that the natural food for the adult can later be digested by a normally developed tract. The science of infant feeding will thus influence the art by showing what should and what should not be done in the various manipulations that may be advised. Briefly, all the food principles must be present and in about the same proportion as in the natural food of the infant. Chemistry will tell us this from an average of many examinations, but can not say the final word. It can tell us that protein exists in certain amount, but the form and adaptation of the protein for the infant's digestive tract can only be determined by biologic methods.

A few simple illustrations may show the practical application of these biologic standards. From chemical analyses we know approximately the quantity of protein an infant needs to produce growth. If chemistry alone is the standard, any form of protein should be satisfactory. It would be possible to give sufficient protein in the form of whey, but this protein (lactalbumin) is in solution and remains fluid in the digestive tract. The same would be true of complete peptonization. However desirable for temporary use, for routine employment these forms of milk are contraindicated by the biologic principle that in all young animals a portion of the protein of the milk is thrown by the young stomach into a more or less solid form, which evidently has for its purpose the development of the motility of the digestive tract.

As another example, if there is a persistent appearance of curds in the stools, it may indicate an intestine too weak in digestive power to take care of the normal curd. Here the use of a substance like citrate of sodium may be scientifically indicated from its action in altering the character of the curd to make it suit the weakened condition of the bowel. As a routine measure for normal infants, however, this should be looked on as an unscientific procedure.

Again, it is well understood that gastric digestion in the adult depends essentially on the action of pepsin and hydrochloric acid on proteins, and in infancy there is little acid secreted. As the stomach develops, more pepsin and acid are secreted. Is it not, then, contrary to biochemical science to check the beginning action of the gastric secretion by loading the food with bicarbonate of sodium, or other strong ant-acids, as a routine measure? Biology teaches that organs improve in capacity by a normal increasing use. What chance has the stomach to develop its function if the food constantly contains ingredients that will more than neutralize the acid it secretes and thus check one of its functions? On the contrary, if there is an acid intoxication, or an abnormally acid secretion, then it will, indeed, be scientific to correct such abnormal conditions by giving ant-acids. These illustrations show that when the science of infant feeding is understood the methods to be used under different conditions will be self-evident, which could never be the case so long as chemical data alone are assumed to be the exclusive basis of scientific infant feeding.

The scientific principles involved in infant feeding are few and simple. The methods of applying them are many and may be as simple or as complex as one desires to make them. The point ever to be kept in mind is: What is the effect of a proposed method and does it apply correct scientific principles? Many of the methods that have been proposed are unscientific when employed as routine measures, although they may be scientific under certain conditions; and methods that may be scientific as routine measures may be unscientific when applied to abnormal conditions.

Various methods of preparing food have been well worked out and simplified, but they will be of little value to the physician unless he knows why, and how, and when to use them. In this way only can scientific methods prevail. Infant feeding can only become scientific by being placed in line with the methods of science in general.

Early Use of Chloroform in Eclampsia.—J. R. Fothergill, in the *Journal of Obstetrics and Gynecology of the British Empire*, reports a case of eclampsia, occurring in 1849, in which his father, John Fothergill, M.R.C.S., used chloroform to control the convulsions during delivery. He states that this is probably one of the earliest recorded cases in which chloroform was used for this purpose.

INVESTIGATION OF BLOOD FOR TUBERCLE BACILLI

CONTAMINATION OF DISTILLED WATER WITH ACID-FAST ORGANISMS A SOURCE OF ERROR

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In view of the recent publications by Rosenberger[1] of the remarkable results of his investigations of the blood for tubercle bacilli, it seems worth while to publish my experiences in a similar investigation conducted in November, 1908, without knowledge of this author's work. The report is intended to repeat a warning by calling attention again to the dangers of contamination with other acid-fast organisms.

In his text-book, "Clinical Pathology of the Blood," Ewing reviews briefly the work done previous to 1891, in which various investigators found tubercle bacilli in the blood. He then says: "Grave doubt was, however, thrown on all previous work in this field by the negative results obtained by Guttman and by Kossel, who called attention to the danger of contamination in such specimens. This method of diagnosis has not been followed up in later years, although Kronig, in 1894, recommended the staining of centrifugalized laked blood in doubtful cases of miliary tuberculosis." Ewing further cites Kuhnau, who obtained only one positive result from twelve inoculations with the blood from severe febrile cases of tuberculosis.

TECHNIC

It should be recalled at once that ordinary methods of heat sterilization have no effect on the staining properties of tubercle bacilli and of the other members of the acid-resisting group of bacilli. Exposure for a few seconds to pure nitric acid, however, and also to the direct flame destroys their staining properties. In this work, therefore, the slides and cover-glasses used were exposed to the flame, and other glassware was treated with pure nitric acid and rinsed with alcohol and ether. A few drops to 10 c.c. of blood were drawn either from a vein or from the finger-tip, the skin being cleaned with soap and water, alcohol and ether. For laking the blood I used very dilute acetic acid or 0.2 per cent. ammonium oxalate in distilled water, which was furnished daily by the Canal Commission for drinking purposes. This laked blood was then centrifugalized and smears made from the sediment, a very pretty field of thickly spread leucocytes being obtained. Each cover-glass smear was traversed ten times with the 1/12 lens, as an arbitrary standard of search. Nitric acid, 25 per cent., followed by 95 per cent. alcohol, decolorized the preparations, and a counter-stain of methylene blue was used. The distilled water and all solutions used were repeatedly centrifugalized, and smears made from the sediment were examined for acid-alcohol-resisting bacilli. At first results were constantly negative. An earnest attempt was made to exclude every possibility of contamination.

BLOOD EXAMINATIONS AND ANIMAL INOCULATIONS

On Nov. 1, 1908, a patient was admitted with high fever, meningeal signs, convulsions, and a moderate leucocytosis. Blood culture (10 c.c. in Conradi's medium) gave no growth after twenty-four- and forty-eight-hour transplants on agar. Lumbar puncture, November 2, showed an increased quantity of cerebrospinal fluid under a pressure of 212 mm. The fluid was very faintly turbid, contained a considerable quantity of proteid, and a slight increase of leucocytes, the large mononuclears predominating. Cultures from the spinal fluid were negative. A portion of the fluid was diluted with distilled water, centrifugalized and examined. Acid-alcohol-resisting bacilli were found. The patient died November 3, and the autopsy showed edema of the cerebral meninges; bronchopneumonia; a small tuberculous cavity, 1 cm. in diameter, in the apex of the right lower lobe; a calcified and pigmented tubercle, 1.5 by 1 cm. in size, in the pleura of the right lower lobe; one calcified peribronchial lymph-node on the right side. Cultures on agar-slant from the spleen were negative.

Having found tubercle-like bacilli in the spinal fluid, the idea suggested itself that this case might be one of "typhobacillose" described by Landouzy.[2] I took, therefore, a portion of the bile, in which had been placed 10 c.c. of blood, diluted with distilled water, and centrifugalized. In the smear 58 acid-alcohol-resisting bacilli were found. A diagnosis of acute tuberculous septicemia was made. Fifteen days later, after most of the work had been done, it occurred to me that it would be interesting to make another transplant from the bile-blood culture, which had been fortunately saved. To my surprise, a fairly good growth on agar of a small diplococcus was obtained. On blood agar, after several transplants, this diplococcus developed a well-defined, distinctly staining capsule, and proved to be a pneumococcus. Pneumococcus septicemia, without pulmonary consolidation, is not an infrequent occurrence in Panama, and in several cases I have been able to isolate the organism from the blood before a meningitis developed and when there were no signs other than high fever, leucocytosis, arthritis or epididymitis. Eventually, therefore, the diagnosis in this case was corrected to pneumococcus septicemia.

The first findings, however, led me to investigate the blood of other patients, and in cases of pulmonary tuberculosis the results were uniformly positive. Altogether twenty-six positive examinations were made, including cases of pulmonary tuberculosis, cervical and inguinal adenitis, pleurisy with effusion, miliary tuberculosis, intestinal hemorrhage of obscure origin, abdominal pain and diarrhea, dysentery of obscure origin, arthritis of hip-joint, and other obscure fevers. In none of these cases could a diagnosis of tuberculosis be excluded clinically. There were negative results in one case of pneumonia, one of cervical adenitis which later subsided with antisyphilitic treatment, one case of pregnancy, and one of obscure continued fever. During this time there was only one autopsy on a non-tuberculous body. Examination of a mixture of cerebrospinal fluid and blood from this case showed two atypical and indefinitely staining, but suspicious bodies.

These remarkable results were rendered more credible by certain coincidences which seemed to be at the time convincing evidence of their validity. Two patients were admitted early in the course of an acute continued fever, the temperature ranging from 102 to 103. Blood was taken at the same time for cultures in ox-bile and for examination for tubercle bacilli. The examination for tubercle bacilli was made at once with positive findings in each case. Although both resembled typhoid ruminant herbivora, such as the mare and ass, the protein coagulates in gelatinous masses that can easily leave the stomach. The reason for passing the curds quickly along is, that in this class of animals digestion is largely intestinal, and the intestines form about 90 per cent. of the digestive tract. Later, grain and grasses must be largely digested in the intestinal portion of the tube, and hence the curd is here also especially adapted to develop the intestinal tract for its future work. In human milk, the curd is thrown down in flocculent masses—a form intermediate between the solid and gelatinous types of curd previously noted. While digestion begins in the stomach it is largely carried on and completed in the intestine, and the stomach forms about 20 per cent. of the digestive tract. The curd is thus adapted to start the development and motility of the stomach and finishes by instituting these functions in the bowel which is destined to play a predominant part in digestion. Here again the curd, so far as the form is concerned, furnishes an analogue and precursor of the future food of the infant. The curd forms small, flocculent masses, and the future food must be separated later into small masses by chewing before digestion can take place to the best advantage.

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[1] Am. Jour. Med. Sc., February, 1909; New York Med. Jour., June 19, 1909

[2] Internat. Cong. on Tuberculosis, Washington, 1908, Section ii, No. 2.

We have thus seen that the milk of herbivorous animals whose digestion is principally gastric forms solid curds which can not easily leave the stomach; that the milk of herbivorous animals whose digestion is principally intestinal forms gelatinous curds which easily leave the stomach and pass into the intestines; and that women's milk, which is intended for a digestive system in which gastric digestion is more than that of the horse or ass, but not so great as the cow or goat, curds in flakes that stand between the other two types of curds.

Biologic science thus shows us that, while a certain amount of protein is present in the milk of all animals, and is necessary for tissue building and growth, this protein must not only be coagulable, but must curd in a certain specific way in each species of animal. The protein is thus the least readily interchangeable of the ingredients of the milks of different species. In this way, science teaches that the protein must not be thrown into a soluble form or so altered as not to react normally to the digestive secretions if we would have healthy growth. We must always remember that the protein has a developmental as well as nutritive function to perform. While immediate nutrition is of great importance to the growing infant, we must not, by putting all food in a soluble form for quick absorption, neglect to give proper work for the secretions and musculature of the digestive tract. It is only by the latter method that the natural food for the adult can later be digested by a normally developed tract. The science of infant feeding will thus influence the art by showing what should and what should not be done in the various manipulations that may be advised. Briefly, all the food principles must be present and in about the same proportion as in the natural food of the infant. Chemistry will tell us this from an average of many examinations, but can not say the final word. It can tell us that protein exists in certain amount, but the form and adaptation of the protein for the infant's digestive tract can only be determined by biologic methods.

A few simple illustrations may show the practical application of these biologic standards. From chemical analyses we know approximately the quantity of protein an infant needs to produce growth. If chemistry alone is the standard, any form of protein should be satisfactory. It would be possible to give sufficient protein in the form of whey, but this protein (lactalbumin) is in solution and remains fluid in the digestive tract. The same would be true of complete peptonization. However desirable for temporary use, for routine employment these forms of milk are contraindicated by the biologic principle that in all young animals a portion of the protein of the milk is thrown by the young stomach into a more or less solid form, which evidently has for its purpose the development of the motility of the digestive tract.

As another example, if there is a persistent appearance of curds in the stools, it may indicate an intestine too weak in digestive power to take care of the normal curd. Here the use of a substance like citrate of sodium may be scientifically indicated from its action in altering the character of the curd to make it suit the weakened condition of the bowel. As a routine measure for normal infants, however, this should be looked on as an unscientific procedure.

Again, it is well understood that gastric digestion in the adult depends essentially on the action of pepsin and hydrochloric acid on proteins, and in infancy there is little acid secreted. As the stomach develops, more pepsin and acid are secreted. Is it not, then, contrary to biochemical science to check the beginning action of the gastric secretion by loading the food with bicarbonate of sodium, or other strong ant-acids, as a routine measure? Biology teaches that organs improve in capacity by a normal increasing use. What chance has the stomach to develop its function if the food constantly contains ingredients that will more than neutralize the acid it secretes and thus check one of its functions? On the contrary, if there is an acid intoxication, or an abnormally acid secretion, then it will, indeed, be scientific to correct such abnormal conditions by giving ant-acids. These illustrations show that when the science of infant feeding is understood the methods to be used under different conditions will be self-evident, which could never be the case so long as chemical data alone are assumed to be the exclusive basis of scientific infant feeding.

The scientific principles involved in infant feeding are few and simple. The methods of applying them are many and may be as simple or as complex as one desires to make them. The point ever to be kept in mind is: What is the effect of a proposed method and does it apply correct scientific principles? Many of the methods that have been proposed are unscientific when employed as routine measures, although they may be scientific under certain conditions; and methods that may be scientific as routine measures may be unscientific when applied to abnormal conditions.

Various methods of preparing food have been well worked out and simplified, but they will be of little value to the physician unless he knows why, and how, and when to use them. In this way only can scientific methods prevail. Infant feeding can only become scientific by being placed in line with the methods of science in general.

Early Use of Chloroform in Eclampsia.—J. R. Fothergill, in the *Journal of Obstetrics and Gynecology of the British Empire*, reports a case of eclampsia, occurring in 1849, in which his father, John Fothergill, M.R.C.S., used chloroform to control the convulsions during delivery. He states that this is probably one of the earliest recorded cases in which chloroform was used for this purpose.

INVESTIGATION OF BLOOD FOR TUBERCLE BACILLI

CONTAMINATION OF DISTILLED WATER WITH ACID-FAST ORGANISMS A SOURCE OF ERROR

WALTER V. BREM, M.D.
Chief of the Medical Clinic, Colon Hospital
CRISTOBAL, CANAL ZONE

In view of the recent publications by Rosenberger[1] of the remarkable results of his investigations of the blood for tubercle bacilli, it seems worth while to publish my experiences in a similar investigation conducted in November, 1908, without knowledge of this author's work. The report is intended to repeat a warning by calling attention again to the dangers of contamination with other acid-fast organisms.

In his text-book, "Clinical Pathology of the Blood," Ewing reviews briefly the work done previous to 1891, in which various investigators found tubercle bacilli in the blood. He then says: "Grave doubt was, however, thrown on all previous work in this field by the negative results obtained by Guttman and by Kossel, who called attention to the danger of contamination in such specimens. This method of diagnosis has not been followed up in later years, although Kronig, in 1894, recommended the staining of centrifugalized laked blood in doubtful cases of miliary tuberculosis." Ewing further cites Kuhnau, who obtained only one positive result from twelve inoculations with the blood from severe febrile cases of tuberculosis.

TECHNIC

It should be recalled at once that ordinary methods of heat sterilization have no effect on the staining properties of tubercle bacilli and of the other members of the acid-resisting group of bacilli. Exposure for a few seconds to pure nitric acid, however, and also to the direct flame destroys their staining properties. In this work, therefore, the slides and cover-glasses used were exposed to the flame, and other glassware was treated with pure nitric acid and rinsed with alcohol and ether. A few drops to 10 c.c. of blood were drawn either from a vein or from the finger-tip, the skin being cleaned with soap and water, alcohol and ether. For laking the blood I used very dilute acetic acid or 0.2 per cent. ammonium oxalate in distilled water, which was furnished daily by the Canal Commission for drinking purposes. This laked blood was then centrifugalized and smears made from the sediment, a very pretty field of thickly spread leucocytes being obtained. Each cover-glass smear was traversed ten times with the 1/12 lens, as an arbitrary standard of search. Nitric acid, 25 per cent., followed by 95 per cent. alcohol, decolorized the preparations, and a counter-stain of methylene blue was used. The distilled water and all solutions used were repeatedly centrifugalized, and smears made from the sediment were examined for acid-alcohol-resisting bacilli. At first results were constantly negative. An earnest attempt was made to exclude every possibility of contamination.

BLOOD EXAMINATIONS AND ANIMAL INOCULATIONS

On Nov. 1, 1908, a patient was admitted with high fever, meningeal signs, convulsions, and a moderate leucocytosis. Blood culture (10 c.c. in Conradi's medium) gave no growth after twenty-four- and forty-eight-hour transplants on agar. Lumbar puncture, November 2, showed an increased quantity of cerebrospinal fluid under a pressure of 212 mm. The fluid was very faintly turbid, contained a considerable quantity of proteid, and a slight increase of leucocytes, the large mononuclears predominating. Cultures from the spinal fluid were negative. A portion of the fluid was diluted with distilled water, centrifugalized and examined. Acid-alcohol-resisting bacilli were found. The patient died November 3, and the autopsy showed edema of the cerebral meninges; bronchopneumonia; a small tuberculous cavity, 1 cm. in diameter, in the apex of the right lower lobe; a calcified and pigmented tubercle, 1.5 by 1 cm. in size, in the pleura of the right lower lobe; one calcified peribronchial lymph-node on the right side. Cultures on agar-slant from the spleen were negative.

Having found tubercle-like bacilli in the spinal fluid, the idea suggested itself that this case might be one of "typhobacillose" described by Landouzy.[2] I took, therefore, a portion of the bile, in which had been placed 10 c.c. of blood, diluted with distilled water, and centrifugalized. In the smear 58 acid-alcohol-resisting bacilli were found. A diagnosis of acute tuberculous septicemia was made. Fifteen days later, after most of the work had been done, it occurred to me that it would be interesting to make another transplant from the bile-blood culture, which had been fortunately saved. To my surprise, a fairly good growth on agar of a small diplococcus was obtained. On blood agar, after several transplants, this diplococcus developed a well-defined, distinctly staining capsule, and proved to be a pneumococcus. Pneumococcus septicemia, without pulmonary consolidation, is not an infrequent occurrence in Panama, and in several cases I have been able to isolate the organism from the blood before a meningitis developed and when there were no signs other than high fever, leucocytosis, arthritis or epididymitis. Eventually, therefore, the diagnosis in this case was corrected to pneumococcus septicemia.

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In another instance, for a control, an apparently healthy patient, who had been admitted for malarial fever and who had had no fever for several days, was selected. In his blood acid-alcohol-resisting bacilli were found. I then made a more careful examination of the patient and discovered a pleural effusion reaching about 4 cm. above the normal border of the base of the left lung. The diagnosis of effusion was confirmed by thoracentesis.

Another patient had a high continued fever, the temperature remaining at 104 to 105 F. for two weeks. Two blood cultures in ox-bile were negative; leucopenia was marked with an almost complete absence of polymorphonuclear leucocytes which fell to 5 per cent. There was a profuse hemorrhage into the conjunctivæ with purpura of the lids; other purpuric areas developed on the trunk, and there appeared peculiar bullous skin lesions, very superficial on a hemorrhagic base. Extensive noma of the lower lip developed, a few scattered râles were present in both lungs, the spleen was enormous. Tubercle-like bacilli were found in the blood, stools, urine and scrapings from the base of one of the skin lesions. The stool was boiled in 0.6 per cent. sodium carbonate in distilled water and centrifugalized; the urine was diluted with distilled water, sedimented, and the lower portion centrifugalized; and subsequently I learned that the ward physician who examined the skin lesion had teased the scraping in distilled water. A lesion examined later without using water was negative. A diagnosis of miliary tuberculosis was made. Later, and after I had discovered the source of contamination, the patient's fever terminated by crisis and recovery was good. I was never able to arrive at a satisfactory diagnosis.

These [illegible] bacilli were likewise readily found [illegible] and in stools and urines examined by the method indicated above. The morphology of the bacilli was typical of tubercle bacilli. There were long beaded forms and shorter solidly-staining ones; they were frequently scattered, but usually in clumps of two, ten, thirty, and sometimes one hundred or more. The number of bacilli in one cover-glass preparation varied from two to several hundred.

During all this time, sources of error in technic or sources of contamination were diligently sought, for the ease with which positive results were obtained rendered it almost incredible that such a bacillemia had not been demonstrated before. The water, sodium carbonate, sodium hydrate, ammonium oxalate, acetic acid, and alcohol were repeatedly centrifugalized separately and smears from the sediment examined with negative result. The carbol-fuchsin solution and methylene blue were likewise examined and nothing found. More time was consumed in searching for error than in the examination of blood.

On November 11 the heart's blood of five guinea-pigs was drawn for examination. On November 12 four of these pigs were inoculated intraperitoneally with the sediment from three to nine drops of blood taken from two positive cases of pulmonary tuberculosis and two cases of suspected tuberculosis. The fifth pig had been inoculated subcutaneously on October 11 with sputum from a case of [illegible] tuberculosis. Immediately after [illegible]ds drawn the day before from the heart were examined and tubercle-like bacilli found in all five instances. One of the pigs inoculated from a suspected tuberculous case was killed at once, and the autopsy showed no tuberculous lesions. But again in blood taken from its heart at autopsy similar bacilli were found. The other four pigs all remained healthy for more than four months. On March 19, 1909, two more of them were killed and examined with negative results. One of these had been inoculated with blood from a patient with pulmonary tuberculosis, the other with sputum from the suspected case. The remaining two, being apparently healthy, were returned to the pen.

The result of the examination of these guinea-pigs weakened my faith in the validity of the observations and stimulated my desire to find a source of contamination. On November 13 scrapings were made from the hair and skin of a guinea-pig and from the skin of my hands. These scrapings were placed separately in dilute acetic acid made with distilled water, in order to reproduce the technic of blood examinations, and the suspension was centrifugalized and sediment examined. Tubercle-like bacilli were found in both instances.

THE SOURCE OF ERROR

On November 14 the real source of error was discovered by the simple device (which should have been used before) of fixing to the slide with egg albumin the sediment from distilled water in the laboratory jar. In traversing the smear one time about 600 acid-alcohol-resisting bacilli were found. Smears made with egg albumin alone were negative. Other laboratory solutions made up with distilled water were then examined in the same way, and sodium carbonate, sodium hydrate, ammonium oxalate, etc., were all found to contain similar bacilli. Freshly delivered distilled water (250 c.c.) was sedimented and examined. I estimated that in one cover-glass preparation there were about 30,000 of these organisms. In the tap-water an occasional acid-alcohol-resisting bacillus could be found, about one in each loopful of sediment. The sediment from 250 c.c. of distilled water and from 1,000 c.c. of tap-water was used to inoculate guinea-pigs. They both remained healthy, and at autopsy March 19, 1909, showed no tuberculous lesions.

I now had distilled water made in the laboratory. The receiving flask was treated with pure nitric acid, and, after the first portion of the distillate had passed over, the flask was rinsed with the second portion, and the third portion was saved. The flask was plugged with cotton, which was not sterilized. Examination of the bottom portion of this water (fixing with egg albumin) was negative for tubercle-like organisms.

To a portion of spinal fluid that had shown acid-fast bacilli on previous examination with Canal Commission distilled water, alcohol was added, and the precipitated proteid centrifugalized and examined with negative result. A portion of a pleural effusion was placed in 0.2 per cent. solution of ammonium oxalate (prepared with the laboratory distilled water), centrifugalized and examined with negative results. A bile-blood culture from an obscure case of remittent continued fever, in which tubercle-like bacilli had been found previously, was centrifugalized and examined. Five suspicious bodies were found, but they were atypical and indefinite.

It was my intention to review the work with water and solutions assuredly bacteria-free, but circumstances at that time and since have prevented. When Rosenberger's first article appeared three months later, however, I selected a positive case of pulmonary tuberculosis and examined the blood by his method, using my old laboratory distilled water in making up the citrate solution and in laking the blood on the slide. I had no difficulty in demonstrating acid-alcohol-resisting bacilli.

I then made three thick blood smears directly on glass slides, laked the blood with the laboratory distilled water and examined them. The first two smears were negative after a thirty-minute examination of each, but in the third I found fifty-seven tubercle-like bacilli in fifty-five minutes. This seemed to be very conclusive, for absolutely the only source of contamination had to be the distilled water which was allowed to dry on the smear after laking the blood. But, my confidence in distilled water having been shaken, I examined with egg albumin the small sediment that had formed and found considerable numbers of acid-alcohol-resisting bacilli.

The identification and description of this organism and the method of contamination remain for further investigation. It is probable that they belong to the grass bacilli. Guinea-pigs were kept in the laboratory where my water was distilled and kept, and the Canal Commission water was delivered in tanks drawn by horses. In both instances it is not very difficult to see how contamination might have occurred.

It seems probable, also, that contamination of distilled water with acid-fast organisms does occur frequently in all laboratories where animals are kept. Recently I have had an opportunity to examine the distilled water of a laboratory in the State of New York. Animals are kept in the basement of this laboratory just beneath and communicating with the room where water is distilled and kept. The still is a Jewell Automatic, and the glass reservoir for distilled water is constantly connected with the still by means of a rubber tube passed through a cotton plug. Acid-alcohol-resisting bacilli were demonstrated in the small quantity of sediment in the reservoir. In a second laboratory, which is on the third floor of a building, in the basement of which animals are kept, no tubercle-like bacilli were found in the distilled water, but there were present acid-semifast (Piffard) spore-like bodies which might have caused some uncertainty if present in suspected specimens.

Rosenberger makes the following statement:

> In the investigations I used sodium citrate solutions made at five different institutions. Some of the spreads were made in one laboratory and laked and stained in another. . . . The solutions of sodium citrate and ammonium oxalate were sterilized by the autoclave or steam sterilizer. . . . Spreads made from the *sediment* [italics mine.—W. V. B.], which occasionally took place in the citrate solution failed to show any so-called citrate bacilli.

Rosenberger fails to state explicitly whether or not a thorough search for acid-fast bacilli in the citrate and oxalate solutions and in the distilled water used in laking the blood was made by fixing the sediment with albuminous material. This procedure in technic is the crux of the whole matter. One result of his animal experiments, 30 guinea-pigs showing acid-fast bacilli in the blood suspensions while having no tuberculous lesions, is strong evidence in favor of contamination rather than of the presence of tubercle bacilli in the circulating blood. Had he examined the blood of these guinea-pigs *before* inoculation, as was fortunately done in my series, his results would probably have been the same. Evidence in favor of Rosenberg's view, however, is furnished by his negative autopsies on seven bodies whose blood suspensions during life had been negative for acid-fast bacilli. But it is only necessary to refer to the almost convincing coincidences of my own work to indicate that "experience is fallacious and judgment difficult."

SUMMARY

1. In examining blood, urine, stools, sputum and exudates for tubercle bacilli, the greatest care should be used to exclude contamination of water and all solutions used with members of the acid-resisting group of bacilli (whether dead or alive).

2. In this investigation, coincidences occurred which were all but convincing of the presence of tubercle bacilli in the blood in every case of tuberculosis.

3. Animal experimentation was negative, but the quantity of blood used for inoculation was too small for the results to be of great value.

4. Acid-alcohol-resisting organisms were found eventually in fresh distilled water furnished by the Isthmian Canal Commission, in tap water, in old distilled water made with care in the pathologic laboratory, and in all solutions made up with the Canal Commission water. These bacilli were either dead or non-pathogenic to guinea-pigs.

5. There is as yet no conclusive proof of the frequent continued presence of tubercle bacilli in the circulating blood.

I wish to express my thanks to Col. W. C. Gorgas for permission to publish this report, and to Dr. Wiliamson, pathologist, and Dr. Glines, in charge of the clinical laboratory, for their interest and assistance in the work.

MEDICAL VERSUS LEGAL RESPONSIBILITY *

ALFRED GORDON, M.D.
Associate in Nervous and Mental Diseases, Jefferson Medical College; Neurologist to Mount Sinai, Douglass and Northwestern General Hospitals
PHILADELPHIA

Among the various problems of human activities there is none more important than the relation of mental state to responsibility. The idea of human liberty and responsibility forms the basis of the penal system. This principle has been recognized by law as indispensable in order to assure the working of social discipline. The doctrine of liberty is old and in its crude form is accepted now, but modern science, based on accurate clinical and experimental methods, has helped to modify to a great extent the fundamental features of the old conception of liberty and responsibility. Mental medicine, through its more elaborate classifications and its continuously widening field of investigations, has revealed new pathologic manifestafever, I predicted that the cultures would be negative for the typhoid-colon group. They proved to be so.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

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I now had distilled water made in the laboratory. The receiving flask was treated with pure nitric acid, and, after the first portion of the distillate had passed over, the flask was rinsed with the second portion, and the third portion was saved. The flask was plugged with cotton, which was not sterilized. Examination of the bottom portion of this water (fixing with egg albumin) was negative for tubercle-like organisms.

To a portion of spinal fluid that had shown acid-fast bacilli on previous examination with Canal Commission distilled water, alcohol was added, and the precipitated proteid centrifugalized and examined with negative result. A portion of a pleural effusion was placed in 0.2 per cent. solution of ammonium oxalate (prepared with the laboratory distilled water), centrifugalized and examined with negative results. A bile-blood culture from an obscure case of remittent continued fever, in which tubercle-like bacilli had been found previously, was centrifugalized and examined. Five suspicious bodies were found, but they were atypical and indefinite.

It was my intention to review the work with water and solutions assuredly bacteria-free, but circumstances at that time and since have prevented. When Rosenberger's first article appeared three months later, however, I selected a positive case of pulmonary tuberculosis and examined the blood by his method, using my old laboratory distilled water in making up the citrate solution and in laking the blood on the slide. I had no difficulty in demonstrating acid-alcohol-resisting bacilli.

I then made three thick blood smears directly on glass slides, laked the blood with the laboratory distilled water and examined them. The first two smears were negative after a thirty-minute examination of each, but in the third I found fifty-seven tubercle-like bacilli in fifty-five minutes. This seemed to be very conclusive, for absolutely the only source of contamination had to be the distilled water which was allowed to dry on the smear after laking the blood. But, my confidence in distilled water having been shaken, I examined with egg albumin the small sediment that had formed and found considerable numbers of acid-alcohol-resisting bacilli.

The identification and description of this organism and the method of contamination remain for further investigation. It is probable that they belong to the grass bacilli. Guinea-pigs were kept in the laboratory where my water was distilled and kept, and the Canal Commission water was delivered in tanks drawn by horses. In both instances it is not very difficult to see how contamination might have occurred.

It seems probable, also, that contamination of distilled water with acid-fast organisms does occur frequently in all laboratories where animals are kept. Recently I have had an opportunity to examine the distilled water of a laboratory in the State of New York. Animals are kept in the basement of this laboratory just beneath and communicating with the room where water is distilled and kept. The still is a Jewell Automatic, and the glass reservoir for distilled water is constantly connected with the still by means of a rubber tube passed through a cotton plug. Acid-alcohol-resisting bacilli were demonstrated in the small quantity of sediment in the reservoir. In a second laboratory, which is on the third floor of a building, in the basement of which animals are kept, no tubercle-like bacilli were found in the distilled water, but there were present acid-semifast (Piffard) spore-like bodies which might have caused some uncertainty if present in suspected specimens.

Rosenberger makes the following statement:

> In the investigations I used sodium citrate solutions made at five different institutions. Some of the spreads were made in one laboratory and laked and stained in another. . . . The solutions of sodium citrate and ammonium oxalate were sterilized by the autoclave or steam sterilizer. . . . Spreads made from the *sediment* [italics mine.—W. V. B.], which occasionally took place in the citrate solution failed to show any so-called citrate bacilli.

Rosenberger fails to state explicitly whether or not a thorough search for acid-fast bacilli in the citrate and oxalate solutions and in the distilled water used in laking the blood was made by fixing the sediment with albuminous material. This procedure in technic is the crux of the whole matter. One result of his animal experiments, 30 guinea-pigs showing acid-fast bacilli in the blood suspensions while having no tuberculous lesions, is strong evidence in favor of contamination rather than of the presence of tubercle bacilli in the circulating blood. Had he examined the blood of these guinea-pigs *before* inoculation, as was fortunately done in my series, his results would probably have been the same. Evidence in favor of Rosenberg's view, however, is furnished by his negative autopsies on seven bodies whose blood suspensions during life had been negative for acid-fast bacilli. But it is only necessary to refer to the almost convincing coincidences of my own work to indicate that "experience is fallacious and judgment difficult."

SUMMARY

1. In examining blood, urine, stools, sputum and exudates for tubercle bacilli, the greatest care should be used to exclude contamination of water and all solutions used with members of the acid-resisting group of bacilli (whether dead or alive).
2. In this investigation, coincidences occurred which were all but convincing of the presence of tubercle bacilli in the blood in every case of tuberculosis.
3. Animal experimentation was negative, but the quantity of blood used for inoculation was too small for the results to be of great value.
4. Acid-alcohol-resisting organisms were found eventually in fresh distilled water furnished by the Isthmian Canal Commission, in tap water, in old distilled water made with care in the pathologic laboratory, and in all solutions made up with the Canal Commission water. These bacilli were either dead or non-pathogenic to guinea-pigs.
5. There is as yet no conclusive proof of the frequent continued presence of tubercle bacilli in the circulating blood.

I wish to express my thanks to Col. W. C. Gorgas for permission to publish this report, and to Dr. Wiliamson, pathologist, and Dr. Glines, in charge of the clinical laboratory, for their interest and assistance in the work.

MEDICAL VERSUS LEGAL RESPONSIBILITY *

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Among the various problems of human activities there is none more important than the relation of mental state to responsibility. The idea of human liberty and responsibility forms the basis of the penal system. This principle has been recognized by law as indispensable in order to assure the working of social discipline. The doctrine of liberty is old and in its crude form is accepted now, but modern science, based on accurate clinical and experimental methods, has helped to modify to a great extent the fundamental features of the old conception of liberty and responsibility. Mental medicine, through its more elaborate classifications and its continuously widening field of investigations, has revealed new pathologic manifestations and types which previously had not been suspected. Normal and pathologic psychology in its turn has availed itself of these discoveries and assisted in throwing light on the obscure problems of personality, memory, volition and reason. The conclusions of modern science lead to a broader and more humane consideration of human responsibility. The old traditions and the material interest which are threatened are not the only elements to be considered. The individual himself, his most intimate and most profound beliefs, the principles of his life in all its manifestations, in the domain of his individual consciousness as well as in their application to social discipline—all these questions are taken into consideration by modern science in its effort to arrive at a proper appreciation of mental responsibility.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

Unfortunately the new investigations do not always bear the fruit which could and should be expected. One of the principal reasons is the fact that the studies of the subject are ignored by those who create the laws and those who administer justice. They view exclusively the social side of the law and are not at all interested in psychologic and medical studies which present a different concept of criminality and of the criminal himself. It is true that penal legislation and legal medicine are distinct and separate sciences, but positive criminology must rely on both branches of human knowledge. An intimate unity of these two sciences is an indispensable and an essential condition of progress. Mathematics is a rational science, physics is an experimental science; a union of the two helped to reveal the essential phenomena of matter. Chemistry and medicine are also distinct sciences, but Pasteur's work built the bridge between the two. Psychology finds its elements in mental pathology and physiology. Modern philosophy is bound to look for assistance in medical sciences.

Criminology has for its object the formation of positive laws concerning crimes and the discovery of remedies for them. With this object in view it searches the truth wherever it can be found and takes from medical and legal sciences data which it needs to form a scientific foundation. By the union of the two sciences the old and too narrow boundaries of human conception of liberty and mental responsibility will be broken and progress will be assured.

An attempt in this direction is presented in the present essay, which is based on a personal experience in the courts of the State of Pennsylvania.

In a number of instances of civil and criminal cases in which the question of responsibility was involved the main issue consisted of the test of "right and wrong." Every other element has been invariably eliminated by the skilful attorneys and even by some judges. It seemed in many cases that the criminals' legal knowledge of right and wrong was all that was necessary for determining the question of whether they were mentally responsible or not. The expert has not been permitted to enter into any explanation and to refer to any facts of the criminal's life, character, demeanor or to facts of marked hereditary nature indicating abnormality of mental processes or insanity, feeble-mindedness, imbecility—all showing complete or limited responsibility. Mentally abnormal individuals, as we shall see later, may know the distinction between lawful and unlawful acts and still be not mentally responsible.

The first test of wrong and right was proposed in 1843 by fifteen judges in England. It appears in the phrases "unable to distinguish right from wrong," or to discern "that he was doing a wrong act," or was "ignorant that he was committing an offence against the laws of God and nation." In 1846 Chief Justice Gibson, of Pennsylvania, said:[1]

> A man may be mad on all subjects; and then, though he may have glimmerings of reason, he is not a responsible agent. This is general insanity; but if it be not so great in its extent or degree as to blind him to the nature and consequences of his moral duty, it is no defence to an accusation of crime. It must be so great as entirely to destroy his perception of right and wrong, and it is not until that perception is thus destroyed that he ceases to be responsible. It must amount to delusion or hallucination controlling his will, and making the commission of the act in his apprehension a duty of overruling necessity.

Speaking further on partial insanity, the judge remarks:

> Insanity may be confined only to one particular subject, and then the individual continues to be a legitimate subject of punishment, although he may have been laboring under an obliquity of vision; a man whose mind squints, unless impelled to crime by this very mental obliquity is as much amenable to punishment as one whose eye squints.

Afterward in 1858 the judge said:[2]

> So far as the act is concerned, insanity must be so great in extent and degree as to blind him to the natural consequences of his moral duty and must have utterly destroyed his perception of right and wrong.

The legal conception of insanity as defined in these few examples had such a strong hold that it could not be shaken. It continued to form the basis of decisions and rulings in subsequent cases.

In spite of advancement of scientific research in the field of mental science and psychology, the results are totally or greatly ignored by some jurists. In many instances they continue to follow the old traditional path, no matter how unscientific, irrational and inhumane the test of right and wrong may be.

In discussing the various forms of mental disease we shall see that a person in committing a crime may realize the enormity and the lawlessness of the act and still be irresponsible for the act. The so-called moral insanity presents the most striking example of impracticability of application of the generally accepted test. Here the abnormal moral conceptions, the extraordinary propensities, eccentricities, the abnormal conceptions of obligations, etc., may be present a long time together with the proper conception of wrong in a criminal act. Shall such an individual be considered entirely responsible?

In sane life the knowledge of right and wrong is not the only factor that affects the free choice of our actions. We have to count also with impulses, with powerful motives. The power of restraint is in a certain relation with ideas and feelings which are opposed to the impulses. Will-power may suppress the latter. Will-power depends on the power of deliberation and self-control. The latter two factors differ immensely in various individuals. In normal life consequently an overwhelming pressure of external circumstances may sometimes and in some individuals remove to the background and even check completely the power of restraint or of self-control, although the distinction between right and wrong is totally preserved.

The pathologic states of mentality are characterized precisely by a more or less marked diminution or even complete abolition of the power of deliberation, of will.

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[1] Commonwealth vs. Mosler, 4 Barr, 264, 1846.

[2] Commonwealth vs. Ferth, 3 Phila. 105, 1858, per Ludlow, J.

of self-control, and yet the ability of understanding that an act is morally wrong or forbidden by law may be present in its integrity.

Let us, therefore, consider in detail the various forms of mental abnormality in connection with the principle of right and wrong.

In melancholia, homicide occasionally occurs. The individual kills because he does not wish the victim to suffer through his sins. The delusion is usually intensified by hallucinations and the latter hasten the act. Here an insane motive prompts the action and the morbid condition has affected the mind generally so that the impulse of action is derived from the state of feeling and thought. The distinction between right and wrong is impossible.

In mania all the functions are exalted and there is more or less marked diminution of controlling power, so that even slight stimuli may lead to intense actions. In ordinary cases the intellect is not affected and the individual committing an unlawful act may know perfectly well the significance of the act and still, because of the decrease or complete disappearance of inhibition power, which forms the essential characteristic feature of the disease, the impulse is overwhelming. It is, however, true that in pronounced cases or in chronic cases there is an intellectual weakness and a confusional state so that the maniacal patient is then incapable of understanding the nature of his acts.

In no form of mental disorder can the legal test of right or wrong lead to more errors than in a certain class of paranoia. In the hallucinatory variety of this psychosis the impulse to poison, to kill, to massacre, to persecute is prompted by the hallucinatory images and the power of discriminating between a lawful and unlawful act is distinctly abolished. In another variety of paranoia, the individual is to all appearances a reasonable being, capable of comprehending an ordinary conversation, capable of discussing various subjects, and still on one particular subject his judgment is paradoxical and abnormal. He may then fail to exhibit in a long conversation evident signs of mental derangement until the subject of his main or only delusion is touched on. This is the so-called "partial insanity." Jurists and laymen then say that that individual's insanity is confined to a particular subject, the man being sane in every other respect. Sometimes they say that the man's criminal act is only the expression of depravity or of passion which in their eyes does not appear to differ materially from those of sane men and consequently the criminal impulse is simply an incident in the life of a sane man who is expected to overcome it. Such an individual, in spite of his apparent sane demeanor and attitude not infrequently labors under a special and fixed delusion which he conceals quite skilfully. He silently contemplates revenge and in the most careful and deliberate manner he plans its execution. The criminal knows perfectly well that he is committing an offence against the law and that he may be punished, but his act is prompted by an irresistible impulse which is the direct result of his delusive ideas. In this class of cases one must consider the true factors affecting the criminal act, viz.: the delusion, the defective power of inhibition and the abnormal feeling. These are the only elements that affect the power of free action. They alone must be taken into account in our attempt to appreciate a paranoiac's action. The legal view is totally inadequate and narrow, as alongside of those morbid elements the realization of an unlawfulness of an act may be well preserved.

In general paralysis of the insane the question of responsibility may come up during any of the periods of the disease. When the dementia is pronounced, there can be no doubt as to the patient's incapacity of distinguishing wrong from right. But before mental failure becomes accentuated, the individual may present only peculiarities of conduct, tendencies to deception, fraud or theft, extravagant mode of living, suspicious relations to his surroundings and in addition to this some physical signs also—all showing clearly the development of paresis. While committing an unlawful or criminal act the patient may be fully aware of the illegality of such act and of the consequences he will have to suffer for such an act; nevertheless the man is insane in the true sense of the word and the criminal act itself, as well as the above abnormalities of disposition, character, conduct, is an early sign of the disease. If the test of right and wrong is strictly applied to such cases, the man must inevitably be punished and when the crime is assault and murder he will be hung or electrocuted. Such a procedure is unquestionably a miscarriage of justice and essentially inhuman. A paretic at any of the phases of his disease is insane: his power of control, his feeling, his deliberation are fundamentally defective, abnormal and consequently his acts are the result of sudden morbid impulses. These are the immediate causes of his irresponsibility, but not the legal principle of right and wrong. Illegal acts are sometimes the first manifestations of the disease and the peculiar features with which they are sometimes surrounded lead us to the right road for a diagnosis.

Senility is not necessarily a cause of irresponsibility. Many individuals preserve the integrity of mental faculties until a very old age. When the senile involution has progressed so far as to abolish completely the faculties, all responsibility disappears. But the involution may be slow, irregular and at the same time progressive, and in such cases there may be a long phase during which the moral conceptions, obligations, the sense of propriety, affection may gradually undergo radical changes so as to lead to most unexpected acts. A senile dement, no matter how slight his dementia may be, is apt to commit the most extraordinary acts. In making a will, for example, he may be guided by petty motives which are easily aroused; anger, desire for revenge, jealousy can be stimulated with the greatest facility, and a will signed by a senile dement may express the most extraordinary, most unjust, most inhumane wishes. As he is easily influenced, he may change his will at each change of his humor. In spite of this variability of actions, he may be fully aware that he is doing a wrong act. He may fully realize the injustice done to persons whom he deprives of the worldly goods and he will, therefore, be legally responsible. The test required by law is positive here, but is it just? A senile dement is in a pathologic state; he is insane in the most proper sense of the word. Scientifically he can not be considered responsible, and consequently by relying exclusively on the classical legal test, injustice is easily done.

Let us now turn our attention to the application of the legal test to the question of responsibility in individuals with congenital mental infirmities. The subject is a very important one, as we deal here not with insanity or qualitative changes of mind which are acquired in adult life, but with quantitative deficiencies inherent to the individual. To this group belong idiocy, imbecility, feeble-mindedness and a host of intermediary, transitional varieties. To this group belong also the deficiencies of a large class of neuropathic individuals.

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who present during life episodic psychasthenic manifestations, such as 'phobias, obsessions, abulia, *folie de doute, délire de toucher,* etc.

The idiot and the low-grade imbecile can not be expected to realize the enormity and the lawlessness of a criminal act, but when an attempt is made to apply the classical legal test to cases of milder intellectual weakness, to the large class ranging between imbecility to simple backwardness, one is bound to appreciate its inapplicability.

This class of individuals present, besides a certain degree of intellectual inferiority, a certain inaptitude to acquire knowledge, to perform mental operations of a more or less complex nature, but also and particularly an inherent deficiency of inhibitory power. Their whole existence is composed of incidents of an instinctive nature, as the instinct predominates in them and, therefore, their actions are invariably the result of impulses. Some of these individuals may be fully aware of the illegality of a certain act, they may fully realize that murder, assault, arson, deception which they sometimes commit are morally wrong and punishable by law, and yet they can not for the above reasons be held totally accountable for their actions. Is it an act of judicial wisdom to hang or to send to the electric chair or else imprison for life, if they have committed capital crimes, individuals who present an arrested mental development of various degrees, also the so-called peculiar, eccentric, queer individuals, those who present episodically during life obsessions, 'phobias or other deviations from normal cerebral functions—otherwise speaking individuals with an abnormal psychic make-up, although not insane in the proper sense of the word—is it, I say, an act of justice to consider them completely responsible and consequently inflict a corresponding severe punishment for only this reason, that they can discriminate legally wrong from right?

Régis has recently said:

> Mankind unfortunately can not be divided from a psychologic standpoint into two distinct categories, viz., one side mentally sane or totally responsible and on the other side, insane and totally irresponsible. Between the two there is a large province, the so-called intermediary zone populated by individuals tainted in various degrees and consequently presenting very different degrees of responsibilities. Although it is impossible to measure the latter by millimeters, it is nevertheless possible to establish for them from this standpoint an ascending or descending scale and consider quite precisely three progressive degrees, viz., slightly, sufficiently and very largely limited responsibility.

The group of cases which I have just discussed is, scientifically speaking, composed of individuals whose responsibility can by no means be total; it must be limited. The latter is not a subterfuge of the expert, but a scientific fact established on scientifically accurate clinical observations which can not be denied. It is, therefore, evident that the legal test of wrong and right can not be applied to those cases, and if it is applied, as it is frequently done, the results are bound to be disastrous as far as the administration of justice is concerned.

Mental disturbances caused by intoxication with alcohol, opium and other poisons deserve some consideration with regard to the medicolegal test. Alcohol is a very powerful etiologic factor of criminality. One may say that it plays a very important rôle in the majority of committed crimes.

When a crime is committed by an individual while in a state of intoxication, several possibilities must be considered, viz.: whether the intoxication occurred in an individual with a pre-existing mental affection or without it, also whether the intoxication was intentional for the purpose of committing the crime during that state. It stands to reason that the delirious or confusional or stuporous states caused by an intoxication *per se* render the affected person irresponsible. It is impossible to expect from an acutely intoxicated individual a clear conception of right and wrong. His reasoning, judgment and discriminatic [illegible] and quantitatively disturbed. If, [illegible], [illegible] of right and wrong is the legal criterion of responsibility or irresponsibility, grave mistakes must be committed; a criminal will become intoxicated intentionally and then claim excuse for his act in the drunkenness; if he is acquitted or only slightly punished on that ground the community will suffer an injustice. On the other hand, an inability to distinguish right from wrong means insanity from a legal standpoint. A man who became incidentally intoxicated can not be considered insane and committed to an asylum. It is, therefore, evident that from every standpoint in such cases the law can not rely on its classical test in determining the question of responsibility.

Chronic intoxication (alcoholism, morphinism, etc.) are characterized chiefly by a gradual progressive mental enfeeblement. But before the latter becomes pronounced there may be evident changes in the affective sphere of life. Irritability, susceptibility, outbreaks of anger, indifference, loss of affection for the near and dear ones—may all be the [illegible] These manifestations may be more [illegible] intellectual enfeeblement which in some cases progresses very slowly. Crimes or any illegal act may be committed during any of the phases of chronic alcoholism, morphinism or other intoxications. They may, therefore, occur at a stage when, in spite of the gradual deterioration, the faculty of discrimination is preserved to a more or less sufficient extent so as to know that his acts are wrong or right. Nevertheless the individual is in a diseased condition, his organs and tissues are undergoing degeneration. His demeanor, attitude, relation to others, show that his volition suffers, his power of inhibition is deficient. Such an individual, even with preservation of a large part of the faculty of discrimination, can not be held totally responsible. The legal test applied to such cases will naturally lead to a miscarriage of justice. Chronic alcoholism, morphinism or other intoxications at any of their phases are veritable diseases requiring medical supervision.

A very important and serious problem confronts alienists and jurists in deciding the question of responsibility of a person during the state of lucid intervals. For the purpose of simplification I embrace under this term intermissions, viz.: apparently normal intervals between individual attacks of a certain mental affection; also brief periods of apparent lucidity of mind occurring in the course of any psychosis, finally the remissions, viz., an attenuation of symptoms for a more or less long period.

A question arises: How much is the legal test of wrong and right justifiable in cases of criminal acts committed during lucid intervals? There can be no doubt that at that time the discrimination between lawful and unlawful acts is possible; consequently should the individual's responsibility be then considered complete?

A person once affected with acute melancholia or acute mania may have recurrences at intervals of months' or years' duration. The question is whether the person thus affected can be considered as entirely cured during those intervals. Experience teaches that the degree of recovery and its duration are variable. When we are in presence of an individual with a history of several attacks of a certain mental affection, who has just recovered from one, perhaps to enter another, and who happened to commit a criminal act during the interval—are we justified in considering him completely normal and perfectly responsible only because he is able to realize legally the criminality of his act? The fact of his being repeatedly subjected to attacks of mental derangement, even at long intervals, is a proof of the individual's mental and moral make-up being abnormal and pathological. These remarks are particularly applicable to the lucid moments proper, which occur in the course of a certain psychosis and which are brief or very brief in duration. Such lucidity is only ephemeral, more apparent than real. A civil act such as a will, for example, executed or altered during the lucid interval, should not be considered valid, in spite of the individual's knowledge of the wrong he did to those who are the interested parties.

During remissions, particularly those of paresis, various degrees of improvement are observed in the mentality. The improvement may in some cases be so marked as the patients appear perfectly normal. But it must be borne in mind that a remission is only a temporary amelioration of the psychic manifestations, but in no respect a recovery. In paresis, for example, alongside of apparent lucidity of mind, all or some of the sensory and motor symptoms of the disease, always persist. The disease is essentially progressive and not curable, in spite of great improvement that may occur in the psychic sphere. If, therefore, an illegal act is committed by a paretic during a remission, when he is able to distinguish between right and wrong, should he be considered as a normal individual and consequently held totally accountable for his act? From a physiologic standpoint a paretic is at no stage of his affection responsible, and if the legal test is applied to him he must be imprisoned and severely punished. Such a procedure is certainly a miscarriage of justice, as paretic must be housed in asylums or hospitals instead of in prisons.

There are two other affections in which the legal conception of right and wrong, when applied during apparently lucid intervals, may lead to disastrous consequences. I mean dipsomania and epilepsy. As it is well known, the first is characterized by an episodic irresistible desire to absorb alcohol. The dipsomaniac in the early stages of his infirmity presents apparent lucidity of mind and control of his faculties between the attacks of craving for drink. Dipsomania is always the result of a chronic use of alcohol. Whether in its early or later stages, it is a diseased condition and impulsive acts of any nature are likely to occur in such individuals. It is true that in an advanced period there is marked intellectual enfeeblement. In earlier stages the power of reasoning is sufficient for a realization of the criminality of an act, but, being affected by a malady which interferes with his normal life, although paroxysmally, such an individual can not be considered totally responsible; the responsibility is naturally only limited. The legal test consequently is not applicable to cases of this nature; if it were, the prison or gallows would take the place of hospitals. A dipsomaniac's chief characteristic is a pathologic state of inhibitory power.

Turning our attention to epilepsy, we find that the legal application of the usual test encounters some difficulty. In epilepsy a convulsive attack may be followed by an impulsive act of which the patient has no recollection; and then an epileptic seizure itself may consist of intellectual disturbances instead of the habitual muscular manifestations; instead of convulsions there may be unconscious aggressive acts; the patient may steal, rob, attack or kill. The irresponsibility in such cases is, of course, absolute. But when violent acts are committed by epileptics in the lucid intervals between the seizures, viz., when they are capable to appreciate the lawlessness and the consequences of such acts, the legal test of right and wrong appears to be the proper test. Nevertheless, if we consider the permanent state of morbid irritability which renders epileptics more than normal individuals predisposed to outbreaks of anger, of violence (and this is particularly true in cases with frequently occurring seizures); if we also consider that fact that the majority, if not all, epileptics are neuropathic individuals whose unstable nervous system is predisposed to various functional nervous disorders, we can conceive that epileptics between the seizures are only incompletely accountable for their acts; their responsibility must necessarily be limited and a strict application of the legal test is not an act of justice.

CONCLUSIONS

The foregoing review of various mental abnormalities leads directly to this deduction that in cases of insanity or other forms of mental deviation there may be a fair understanding of a morally wrong or right act and of a legal or illegal act, and yet there may be a pathologically insufficient controlling force. Every student of psychiatric problems, every psychiatric clinician knows that these two conditions may coexist, and the absence of the first does not exclude insanity or other psychic abnormality, and consequently does not exclude irresponsibility. Indeed, in some cases the absence or diminution of the faculty of inhibition predominates in the mental picture—or forms the entire symptomatology of the disease. The deviation in the manner of thinking, feeling and acting may not be present in its entirety, but may be dissociated in its original elements. The insane or abnormal feeling is just as important as the insane or abnormal thinking. In a large number of cases the change of feeling may for a long time be the *earliest or the only manifestation of disturbed cerebral* functions and this morbidly altered feeling may be the direct motive for abnormal or criminal actions. Intellectual capacity alone, therefore, can not constitute a proper criterion in consideration of criminal acts, and if the legal test refuses to take into account anything else but intellectual capacity it is radically unscientific and can not properly serve the ends of justice; judicial errors will invariably occur. The whole problem of a test in such cases depends, therefore, on the acceptance of the scientific data accumulated and elaborated from a large number of clinical observations.

To diagnose a mental malady special knowledge is indispensable. The latter is absolutely necessary for the proper appreciation of those cases in which illegal acts are committed by individuals, with all the evidences of reasoning, premeditation and reflection, who are nevertheless lunatics or otherwise mentally abnormal. It is indispensable because sometimes alterations in the psychic sphere are apparently very slight and yet are in reality considerable but concealed. It is indispensable because discovery of important elements for appreciation of certain crimes which are peculiar or unusual in their nature can be made by men who have had a special experience in psychologic analysis. Examination of these cases must be made not only in relation to the circumstances which preceded, accompanied or followed a certain lawless act, but also and particularly in relation to the entire previous and present medical history of the individual himself in all its minutest details, as they all are important in appreciation of his mental make-up. Every clinician is well aware of the importance of all these details. Reliance on one clinical element at the exclusion of all others is contrary to the scientific spirit. Adherence to such a procedure must invariably lead to errors, and this is especially observable in cases in which mental operations are involved. The law that holds a person accountable for his acts only on the basis of discrimination between right and wrong is wholly inadequate, because it is not based on accurate data gathered from clinical experience. The jurist must cooperate with and, I should say, almost entirely rely on the alienist. But the latter must be given the greatest latitude in presenting all the details concerning the medical history of a given case. Under no consideration should he be restricted to limit his opinion as to the exclusive right-and-wrong test. If the expert is ordered to confine himself exclusively to the determination of whether the accused individual is capable to distinguish legally right from wrong, he is then forced to omit extremely important facts which, as we have seen above, constitute sometimes real elements of alienation. Thus a lunatic, in the proper medical sense of the word, will be condemned while in a state of irresponsibility.

Personal experience in the courts of Pennsylvania has convinced me that this test is very strongly adhered to in the majority of instances. In view of our present knowledge of normal and pathologic processes in the psychic sphere, in view of our experience in the manner and methods of the proper appreciation of abnormal mental operations, in view of the evident injustice that may be done to some individuals who are rather subjects for treatment in hospitals than to be placed in prisons and considered as criminals—for all these reasons I believe a revision of the old classical test of right and wrong is strongly required. A combined effort of medical and legal experts must be made for mutual enlightenment on this important subject and avoidance of the repetition of grave errors of the past will thus be accomplished. Human liberty and responsibility are two most serious elements of life that can not be dealt with in a purely technical manner. They must be viewed from the standpoint of the broadest principles governing the interrelation between the individual and the community.

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ABSTRACT OF DISCUSSION

Dr. Charles W. Hitchcock, Detroit: I had occasion during the past year to review the laws of a number of our states regarding the matter of mental responsibility and in the ultimate analysis it seems to me that a great loophole is afforded to the insanity defense by the breadth of the laws, which almost uniformly permit any proof of insanity as an adequate defense for crime, instead of going further and inquiring not only whether the prisoner is insane, but whether he is so insane as to be irresponsible for his act, and is his act in any way the direct fruit of his insanity, if that be proved.

Dr. A. C. Brush, Brooklyn: The question of impulsive acts in insanity is one of grave social importance. It is held in the laws of the state of New York, 157 N. Y., by Justice O'Brien, that, although there may be such a form of insanity recognized, that the patient knows the nature of his act and deplores and fears its consequences, yet he is impelled by an impulse over which he has no control to perform the prohibited act. Whatever authority there may be in medicine there is none in law, and that is a wise decision from a sociologic standpoint; otherwise any prisoner might claim that he had an irresistible impulse to commit crime, and consequently society would be at the mercy of the criminal. It is not the fault of law, but the fault of medicine primarily. So long as we can not define insanity, can not define a dividing line between the sane and the insane, for there is none, the law must have some standard to set up for the defense of criminal cases, and that standard is still the old wild beast theory, and it must remain so until medicine evolves some more modern standard. Lawyers and judges are perfectly willing to accept any new standard if we can furnish it; but as yet we have failed, and until that is done, until we ourselves can evolve some more carefully and clearly defined rule, the present one must prevail.

THE STABILITY OF TYPE OF THE TUBERCLE BACILLUS

A STUDY OF THE TYPE OF CULTURES FROM OLD CUTANEOUS TUBERCLES OF BUTCHERS *

ALFRED F. HESS, M.D.
NEW YORK

It is now generally conceded that the tubercle bacillus of cattle at times incites tuberculosis in man. This conclusion has been definitely established only through the possibility of distinguishing between a bovine and a human type of bacillus, and through employing this method and isolating the bovine type of organism from human tuberculous infections. The studies thus far carried out in different countries, using the same methods of differentiation, agree in charging the human bacillus with a marked preponderance of infections. In this connection, however, there is one disturbing criticism that is now and again brought forth to shake the confidence reposed in these conclusions, based, as they are, on the differentiation of the types of bacilli. It is asserted by some capable workers that it is possible for the bovine bacillus to be so altered by years of sojourn in the human tissues that its essential characteristics become altered and it simulates the human type of bacillus. Without doubt, if this metamorphosis can readily take place, some of those infections which we now believe to have been of human origin may well have had their source in bovine infections of years ago, and it is to no purpose to designate them as human. In fact, if this be so, the entire method of differentiation which has accomplished so much in the past decade, and promises so much more in the practical and theoretical study of tuberculosis, would have to be regarded as not only unreliable, but misleading.

The main difficulty in studying this question in man is that we are rarely certain of the nature of the original infection and accordingly can not judge of the change of type. Our main reliance is generally circumstantial evidence. An exception to this rule, however, is furnished by those few cases of inoculation tuberculosis in which the bovine source of infection is definitely known. I have with difficulty found two cases of this nature, both in slaughter-house workers, and report a study of them coupled with some other experiments relating to the stability of the types of tubercle bacilli.

Case 1.—This man had been employed in his present trade for seven years. Four years ago, while slaughtering an animal,

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he cut the middle finger of his right hand on the pointed end of a rib. He gave no thought to this injury until he found that it was slow to heal; he then merely applied various ointments. Gradually a nodule appeared at the site of the wound which assumed its present condition. He was aware of the tuberculous nature of this nodule, and in fact directed me to another worker who had the same skin lesion. I shall not enter into a minute description of the appearance of this nodule. It was of the size of a large pea, brownish-red and very firm in consistency. The glands at the elbow and axilla were not enlarged. The general health of the man was excellent.

CASE 2.—This case was very similar to the previous one. This man, while slaughtering a tuberculous cow, cut himself with a knife across the knuckles. This accident happened about six years ago. He remembered the date, as he was forced by this disability to quit work for some weeks and to enter the employment of another firm. As in the previous instance, a nodule appeared at the site of injury. The nodule was situated over the fourth left metacarpal joint, and resembled the tubercle described in the previous case, except that its surface was rougher and papilliform. This man also was healthy to all appearances; a large hard epitrochlear gland was palpable at the right elbow.

Both of these men were induced to have their nodules excised. After excision the surface of the growths was removed, and they were thoroughly washed in sterile water. Two guinea-pigs were inoculated subcutaneously with each growth. All four animals developed tuberculosis. It is not necessary for me to give in detail the method of isolating tubercle bacilli from the tissues or the criteria for differentiating the types. The method employed was that now generally followed and made use of by me in previous studies.[1] The cultural growth from these two cases proved to be very similar; in fact, I could not distinguish between them. They both grew sparsely on egg media. They also showed a high degree of virulence for rabbits, producing a generalized tuberculosis when inoculated intravenously in the dose of one milligram. In other words, they were typically bovine.

Before discussing these results I shall describe an experiment undertaken with the object of transforming the bovine type of the tubercle bacillus into the human type. An attempt was made to produce a culture medium resembling in its composition as closely as possible the human tissues. From the outset the inherent variance between an artificial culture medium and the living tissues was clearly realized. For this purpose, however, what may be termed "human-placenta glycerin broth" was devised. Human placenta was obtained under strict aseptic precautions and from this a broth was made, treating the placenta just as the beef is treated in preparing the broth for common use. One per cent. peptone, 0.5 per cent. salt and 5 per cent. glycerin were added. The entire preparation of this culture medium was conducted under as sterile conditions as possible. In order not to destroy the complement of the human placenta, heat was applied only to 55 C. It was possible in most instances to obtain a sterile broth by means of filtration through a Berkefeld filter.

Two bovine strains of known virulence, one of them having been under artificial cultivation for many years, the other only recently isolated, were grown on this culture medium for nine months, comprising eight generations. At the end of this period their virulence for rabbits was found to be as marked as at the beginning, showing that in this respect they had not approached the human type. In fact, the only change that was noted was one to be anticipated from artificial cultivation of any nature, namely, a greater facility of growth in the case of the strain which had been the more recently isolated. As this experiment was very laborious and promised so little, it was discontinued.

The question of the stability or variability of the types of tubercle bacilli has been discussed so frequently that I shall not review the testimony. In connection with this report, however, a few words on this subject seem in place. From the outset it should be realized that this question has a practical as well as a theoretical aspect, and that the two need not be in absolute accord. The former considers whether it is in any way possible by natural or artificial means to convert one type of bacillus into another type; the latter, whether the bacilli isolated from man and designated as human have been converted in his tissues from an original bovine type. These two points of view must not be confused. It is true that it has been demonstrated that under artificial cultivation strains may be greatly changed in their cultural and biologic characteristics. Indeed, a culture isolated almost ten years ago from a cow, and kindly sent to me by Prof. Leonard Pearson, I recently found to simulate the human type both in luxuriance of growth and diminished virulence for rabbits. Even after this long period of artificial cultivation, however, its virulence was still greater than cultures of the human type. Another bovine culture of about the same age was found to be markedly virulent for rabbits.

Such experiments clearly can not be translated into practical evidence on this question. Again, it may be advanced that experiments have been reported showing a conversion of human into bovine bacilli by means of passage through cattle; or of bovine into avian bacilli by means of passage through birds. Even if we accept these interpretations, however, and forego the criticism that has been levelled at them justly by others, we find these experiments to be very few in number and far outweighed by the many others in which no conversion of type was effected. When we consider the practical side of this question and draw our arguments from what we know of tubercle bacilli in man, the following should be borne in mind: It is true that atypical strains have been isolated by many investigators, strains neither typically human nor bovine. This intermediate group may in part be accounted for by attributing the variation to a change of environment, for example, of bovine bacilli in the new environment of human tissue. These atypical strains, it should be remembered, are exceptional; among three bovine and four human strains which I have isolated from man none belong to this category. Furthermore, this deviation from type can not be regarded as evidence of the possibility of a complete change of type. In this connection, it is worthy of note that typical bovine bacilli have been isolated from calcareous lymph nodes of human beings; in such instances the bovine bacilli must have existed in the human tissues for years without undergoing transformation. It has never been shown that the older the tuberculous lesion the less the likelihood of isolating bovine bacilli from man; and yet this corollary should obtain if the bacilli are readily converted in the human tissues. The question may be approached from another point of view. It is well known that no case of primary pulmonary tuberculosis has been indisputably proved to have been incited by the bovine bacillus. These cases form the great mass of tuberculosis and have been studied more than all others. If this form of disease is due in some instances to a bovine bacillus which has been transformed in the human body, we should at least occasion-because discovery of important elements for appreciation of certain crimes which are peculiar or unusual in their nature can be made by men who have had a special experience in psychologic analysis. Examination of these cases must be made not only in relation to the circumstances which preceded, accompanied or followed a certain lawless act, but also and particularly in relation to the entire previous and present medical history of the individual himself in all its minutest details, as they all are important in appreciation of his mental make-up. Every clinician is well aware of the importance of all these details. Reliance on one clinical element at the exclusion of all others is contrary to the scientific spirit. Adherence to such a procedure must invariably lead to errors, and this is especially observable in cases in which mental operations are involved. The law that holds a person accountable for his acts only on the basis of discrimination between right and wrong is wholly inadequate, because it is not based on accurate data gathered from clinical experience. The jurist must cooperate with and, I should say, almost entirely rely on the alienist. But the latter must be given the greatest latitude in presenting all the details concerning the medical history of a given case. Under no consideration should he be restricted to limit his opinion as to the exclusive right-and-wrong test. If the expert is ordered to confine himself exclusively to the determination of whether the accused individual is capable to distinguish legally right from wrong, he is then forced to omit extremely important facts which, as we have seen above, constitute sometimes real elements of alienation. Thus a lunatic, in the proper medical sense of the word, will be condemned while in a state of irresponsibility.

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[1] Hess: Cultures of Tubercle Bacilli isolated from Milk, Jour. Infect. Dis., June, 1909, p. 329.

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seem in place. From the outset it should be once, that this question has a practical as well as a theoretical aspect, and that the two need not be in absolute accord. The former considers whether it is in any way possible by natural or artificial means to convert one type of bacillus into another type; the latter, whether the bacilli isolated from man and designated as human have been converted in his tissues from an original bovine type. These two points of view must not be confused. It is true that it has been demonstrated that under artificial cultivation strains may be greatly changed in their cultural and biologic characteristics. Indeed, a culture isolated almost ten years ago from a cow, and kindly sent to me by Prof. Leonard Pearson, I recently found to simulate the human type both in luxuriance of growth and diminished virulence for rabbits. Even after this long period of artificial cultivation, however, its virulence was still greater than cultures of the human type. Another bovine culture of about the same age was found to be markedly virulent for rabbits.

Such experiments clearly can not be translated into practical evidence on this question. Again, it may be advanced that experiments have been reported showing a conversion of human into bovine bacilli by means of passage through cattle; or of bovine into avian bacilli by means of passage through birds. Even if we accept these interpretations, however, and forego the criticism that has been levelled at them justly by others, we find these experiments to be very few in number and far outweighed by the many others in which no conversion of type was effected. When we consider the practical side of this question and draw our arguments from what we know of tubercle bacilli in man, the following should be borne in mind: It is true that atypical strains have been isolated by many investigators, strains neither typically human nor bovine. This intermediate group may in part be accounted for by attributing the variation to a change of environment, for example, of bovine bacilli in the new environment of human tissue. These atypical strains, it should be remembered, are exceptional; among three bovine and four human strains which I have isolated from man none belong to this category. Furthermore, this deviation from type can not be regarded as evidence of the possibility of a complete change of type. In this connection, it is worthy of note that typical bovine bacilli have been isolated from calcareous lymph nodes of human beings; in such instances the bovine bacilli must have existed in the human tissues for years without undergoing transformation. It has never been shown that the older the tuberculous lesion the less the likelihood of isolat
bacilli from man; and yet this corollary should
the bacilli are readily converted in the hum
The question may be approached from another
view. It is well known that no case of primary
nary tuberculosis has been indisputably proved to
been incited by the bovine bacillus. These cases form t
great mass of tuberculosis and have been studied more than all others. If this form of disease is due in some instances to a bovine bacillus which has been transformed in the human body, we should at least occasion-

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[1] Hess: Cultures of Tubercle Bacilli Isolated from Milk, Jour. Infect. Dis., June, 1909, p. 329.

because discovery of impor bacillus before it has been tion of certain crimes wh type, namely, in the early their nature can be ma t only do we know that this is cial experience in p find that even the intermediate of these cases must in the primary pulmonary cases. circumstances whi em from a practical standpoint the a certain lawl smutation of types may well be disretion to th we can safely continue to investigate the of th of tuberculosis by means of differentiating the ypes of bacilli.

The two cases of cutaneous tuberculosis which I report claim some degree of interest because they constitute bovine infections occurring in adults. The fact that they remained localized should not be attributed to the low degree of virulence for man of the bovine bacillus, as it is well known that cutaneous affections due to the human type of bacillus, such as lupus or the "anatomic tubercles" contracted in the dissecting-room likewise do not tend to systemic invasion. Their main significance, however, lies in the fact that they furnish exceptional instances of bovine tubercle bacilli which have lived in the human tissues for many years without acquiring characteristics of the human type. From this point of view they constitute evidence against the conversion in the human tissues of bovine bacilli into human tubercle bacilli. It would be interesting and of undoubted value if those who have access to similar
of tuberculosis would make them th
logic study.

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SYPHILITIC PSEUDOPARALYSIS*

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Few diseases have been studied with greater care than syphilis, nor have their individual manifestations been noted more in detail, and I am perhaps not far wrong in saying that the literature of medicine is more voluminous on syphilis than any other single disease. This is not a matter for surprise, for no disease has a more widespread influence on human ailment; yet it appears to me that, while the acquired form of syphilis is reasonably well understood, we are still lamentably ignorant of the significance of the hereditary form as it relates to many of the obscure conditions of childhood and young adult life. I therefore deem it not inadvisable to draw attention to just one manifestation of this taint and to report two cases illustrative of several observations which have been made on this class of case.

Syphilitic pseudoparalysis is a manifestation of inherited syphilis which exhibits itself during the first few months of life in a failure, disinclination or inability to move one or all of the extremities, and is variously alluded to in the literature as syphilitic pseudoparalysis, Parrot's paralysis, or merely described under the pathologic condition syphilitic epiphysitis, and belongs under the general class of osteochondritis.

There are various gross appearances dependent on the stage or degree of cartilaginous inflammation. Thus there may be a ring or collar apparent on palpation, partly or wholly surrounding the bone at the junction of the epiphysis with the shaft (usually upper) due to proliferation of the cells, or there may be a distinct separation at the same point due to absorption of the cartilage with accompanying free motion at the false joint thus formed. Or again, there may be complete breaking down of the tissue with pus formation, finally rupturing through the skin forming an open abscess. Such cases, however, are thought to be due to secondary pus infection.

The first symptom to attract attention to this condition is the fact that the child does not move one or all of its extremities. Only one upper extremity may be affected or both arms and both legs. The frequency with which the various extremities are affected does not appear to be settled, and the only observer who reports a sufficient number of cases from which conclusions may be drawn is Bednar, who lists nineteen, as follows: Arms alone, 16 times (does not state whether one or both arms were affected—presumption both); legs only, once, and all limbs twice. While some authors state that it may occur in only one extremity, none cites a case without either both arms or both legs or all four extremities being affected. In case one or both arms are affected the child will lie with them rotated so far inward that the palms face outward. These cases resemble and are in appearance identical with brachial birth paralysis. When the legs are affected, however, the rotation is apt to be outward. Usually the affected limb is in a state of flaccidity, and if the arm is lifted and let fall it will drop again to the same position; or it may be rotated, and if there is separation at the epiphysis it may be moved freely at the point of separation. I doubt if in such cases as this the children ever give evidence of pain, but they certainly have no power of voluntary motion.

In other instances there is a more or less spastic condition, the joint resisting motion and the child crying out with pain on being handled. In addition are the symptoms which I have already described apparent at the joints.

The exact cause of these various symptoms, all accompaniments of the same pathologic process, seems to be as yet undetermined. Sundry theories have been advanced in an attempt to explain the several states of immobility; thus, some consider the flaccidity due to an inability to move on account of separation or absorption of cartilage, some to myositis, others to pain, and still others to involvement of the peripheral branches of the brachial plexus. Each of these may have a basis of fact in individual instances, but are all open to objection when a number of patients are observed, and do not hold true for all cases. Those which I shall report illustrate some of these points very well.

The diagnosis of this condition is exceedingly important since epiphysitis is said to be the most frequent manifestation of inherited syphilis and further because it may be the only evidence of the presence of the taint. There are but four conditions for which it is likely to be mistaken, viz.—scurvy, infantile paralysis, septic epiphysitis and brachial birth

Scurvy is rarely seen befor from the sixth to the fifteenth month—is always bilateral and affects the shafts of the bones, while epiphysitis is located at the extremity, though it is well to bear in mind that cases have been described in which tenderness was present along the shaft as well—and appears rarely after the third month. Infantile paralysis also appears at a later date, is frequently epidemic and the history, onset and course are entirely different. In septic epiphysitis the constitutional symptoms are pronounced and the temperature elevated.

The diagnosis from brachial birth paralysis seems to me to be the most important and presents the greatest difficulties, for, as has been stated before, when the arms alone are affected the picture is more or less typical of Erb's paralysis. It is to be noted, however, that in Erb's paralysis there is usually a history of difficult labor, with traction either with the forceps or with the hands as in delivery of the shoulders, or in lateral traction as in the delivery of the after-coming head in breech cases. It has been known, however, to occur in normal labors. Erb's is usually unilateral, while pseudoparalysis is more apt to be bilateral. (This latter statement is largely inferential since, as stated, I am unable to find positive statements on this point.) The time of the appearance of the immobility of the two conditions may be the same. When separation is present or the characteristic bony ring can be felt, the diagnosis is rendered easy. In Erb's paralysis the electric reaction of degeneration may be present early, whereas in pseudoparalysis, as stated by Holt, the reaction is normal. It is well to bear in mind on this point the statement of Dr. Eustice Smith, that a form of real paralysis is occasionally observed, affecting the branches of the brachial plexus, causing partial or total loss of motion. It is not stated by him whether this paralysis improves under specific treatment. In Erb's paralysis there is a selection of definite groups of muscles and even a sympathetic involvement as shown by narrowing of the palpebral fissure and contraction of the pupil (Bailey). In pseudoparalysis the various groups of muscles are rendered immobile but there is an apparent selection or involvement of the sympathetic.

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* Read in the Section on Diseases of Children of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

In Erb's paralysis slight tumors are sometimes seen at the point of the tear in the nerve fibers. Some patients with Erb's paralysis improve spontaneously, in which event it appears that the diagnosis may become difficult if not impossible. In patients with pseudoparalysis not treated promptly there may be a permanent deformity from partial or complete absorption of the cartilage, and in after life a case of this deformity may again be indistinguishable from the similar deformity resulting from Erb's paralysis, cases of which rarely escape without some deformity. Bailey states that "as a practical fact electricity is rarely necessary in the diagnosis of this form of paralysis, as the flaccid condition of the affected muscles is usually evident before the child is old enough for electrical examination to be feasible." I would again suggest the fact that the diagnosis may not be so easy as this for the reason as stated, that in pseudoparalysis the flaccidity may very closely resemble the condition found in Erb's paralysis.

The following cases illustrate the various points which I have attempted to bring out:

CASE 1.—Colored male 4 weeks old, well developed and nourished; in fact, normal in general appearance, somewhat inclined to be fat. The mother stated that child had appeared all right at birth and up to two weeks of age, when it began to lose use of arms, and that now it made no effort whatever to move them.

Examination.—I found the child lying in its mother's arms apparently comfortable and contented. Both arms hung limp by the sides, and rotated inward to such an extent that the palms faced outward, and at first I thought I had a case of bilateral Erb's paralysis. The arms were freely movable, dropping again to the same position on being lifted and let fall. No attempt was made on the part of the child to move the arms or even the fingers and tickling the palms elicited no reflex. There was apparently a complete paralysis of the entire upper extremity, but not the slightest evidence of pain either on pressure or on motion. The junction of the epiphysis and the shaft of the upper end of the humerus presented a slight enlargement surrounding the bone, barely perceptible owing to the fatness of the infant. There were no discernible blemishes of any kind, in fact, nothing to suggest anything but a healthy infant, except that the spleen was palpable. The temperature was normal, and was at each subsequent examination. I sought out the granny who had presided at the delivery and with difficulty ascertained that the birth had been normal in every particular, of short duration and that this was the mother's fourth child. The cord was not around the neck.

Treatment.—Mercurial inunctions were instituted at once, and after the fourth treatment the child began to move the fingers; in ten days good use of the forearms occurred, and by the end of three weeks the child seemed to be entirely well, including disappearance of thickening of the epiphysis and enlarged spleen. This child died one year later of enterocolitis.

Remarks.—At the time of my first visit I was unable to secure any family history which would aid in a diagnosis. Several months after, however, I had an interview with the father who gave a good history of secondary eruption, following sore on penis, at the time of conception.

CASE 2.—Colored male, 5 weeks old, presented a typical picture of syphilitic infant. He was poorly nourished, had fissures around mouth and anus; skin was dry and scaly, and there was evidence of subsiding pemphigus of palms and soles. Spleen was enlarged, liver apparently was not.

Examination.—The arms hung in the characteristic position already described, no attempt being made at motion, though both arms could be handled and moved freely without evidence of discomfort. In this case the examination of the arms was easy, since the child was thin. A distinct separation could be detected at the upper cartilage on both side with free rotary motion. In this case, as in the first, there was no reflex of the palm, and, in fact, so far as the upper extremities were concerned, it was a reproduction of Case 1 except for the cartilaginous ring. The lower extremity, however, presented a different picture. The legs were rotated outward and were in a state of spasticity and could not be moved on account of the pain thus caused. I could make out no thickening or separation. The legs were rigidly flexed and were exceedingly tender on pressure as well as painful on motion. On tickling the soles of the feet the toes were readily flexed. At no time was there any temperature. There was possibly some tenderness along the spine but this was difficult to determine.

Treatment.—The inunctions were begun at once, and by the end of two months the child was apparently perfectly healthy. It soon passed from observation and I have never seen it since.

In these cases we have every one of the varieties which I have seen described. In the first we have a well-developed child with flaccidity of the upper extremities, slight thickening of the cartilage, no pain on motion or tenderness on pressure, no attempt to move even so much as the fingers and no response to tickling the palms. In this case the immobility can hardly be ascribed to pain, but, as it appears to me, the general appearance is strongly suggestive of nerve involvement.

In the second case we have a poorly developed child, flaccidity of upper extremities as in Case 1, separation of the epiphysis, no attempts to move even fingers, no pain or tenderness on handling or motion. Here the immobility might be ascribed to separation of the epiphysis, but this does not account for the lack of motion in the fingers and the failure to respond to irritation of the palm, and again we have a strong suspicion of involvement of the nerves.

As noted, the legs presented a different picture. They were rotated outward. There was every evidence of pain on pressure or the slightest motion. Muscles were contracted and painful and general spasticity was present, yet the toes contracted when the soles were tickled. In this case we have the suggestion that immobility was due to pain either from myositis or epiphysitis, the muscles contracting in an effort to immobilize the joint, rather than from nerve involvement.

The treatment of the condition should be directed to the counteraction of the specific poison by means of inunctions. Sutherland suggests splints and local applications of mercurial ointment, which he believes to be of special value since he has seen pseudoparalysis develop while child was taking general syphilitic treatment.

I have attempted to write nothing new, but merely to call attention to the importance of the recognition of this condition and its diagnosis, and in the light of what we have before us it seems to me that further investigation of this very interesting condition would be profitable.

Taylor Building.

NODULAR OPACITY OF THE CORNEA

WITH SPECIAL REFERENCE TO ITS ETIOLOGY*

JOHN GREEN, Jr., A.B., M.D.
Ophthalmic Surgeon to the Social Service Hospital
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The ophthalmic literature of the last thirty years contains occasional references to a rare ocular disease characterized by the presence of fairly well-defined opacities situated in the central portion of the cornea. These opacities vary in size and contour and lie in the otherwise relatively clear tissue. The condition was not recognized as a distinct malady until Groenouw, in 1890,[1] and again in 1898,[2] made it the subject of clinical investigation and pathologic study. Since then a number of observers have dealt with the condition and a few have subjected the diseased tissue to histologic examination.

Groenouw states that nodular opacity of the cornea begins with slight inflammatory signs, which are often so insignificant as to escape the notice of the patient. It attacks both eyes and is distinguished by the appearance of numerous, small, roundish or irregular, gray discrete opacities in the otherwise relatively clear corneal tissue. The larger masses, which are situated principally in the superficial layers of the center of the cornea, attain a diameter of 0.25 mm. The overlying epithelium is frequently elevated, but not vesicular. Under high magnification the corneal surface between the masses is seen to be very faintly cloudy.

Our knowledge of the condition was considerably extended by Fuchs[3] on the basis of eight carefully observed cases. He found that the trouble sh a special predilection for young men; (11 males, ale, in the 12
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SYMPTOMATOLOGY

The disease is ushered in by moderate photophobia, epiphora, and occasionally a foreign body sensation. There is no true pain but only a sense of ocular discomfort. These signs are accompanied by diminution of visual acuity. Throughout the long course of the disease there is a conspicuous absence of active inflammatory appearances, although now and again a transient redness, accompanied by photophobia, will manifest itself. The course of the disease is essentially chronic.

In view of its progressive character and rebelliousness to all therapeutic methods, the disease is one that deserves the careful attention of ophthalmologists. The final visual outcome varies from tolerably good vision to finger-counting.

DIFFERENTIAL DIAGNOSIS

Nodular opacity of the cornea is to be distinguished from a number of more or less similar conditions. Fuchs calls attention to some distinguishing features between this disease and superficial punctate keratitis. In nodular opacity the spots are compact and homogeneous. There are no inflammatory appearances and the clinical aspect may remain unchanged for years. In superficial punctate keratitis, on the contrary, the spots are made up of an agglomeration of the very finest dots. Inflammatory appearances are invariably present and the condition undergoes rapid changes. Von Reuss,[4] under the name of "keratitis maculosa," describes a disease consisting of disc-like masses surrounded by a ring occupying for the most part the periphery of the cornea, but also at times the center. Nummular keratitis (Stellwag[5]) consists of very large masses of a saturated yellowish tint lying mostly in the periphery of the cornea and in the superficial layers. Both types, in contradiction to nodular keratitis, offer a good prognosis. Grill-like keratitis is a condition which, in respect to its course, its situation in the center of the cornea and the elevation of the epithelium over the lesions, presents many points of similarity. It is distinguished by the very definite mesh-work or interlacing arrangement of the linear opacities. Fuchs suggests that nodular opacity bears some resemblance to certain cases of old eczematous keratitis in which a thinning of the epithelium over one or more of the denser opacities produces a bluish-white prominence of the corneal surface. According to Morax[6] the disease may be confused with syphilitic nodular keratitis, in
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* Read in the Sectio
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City, June, 1909.

1. Arch. f. Augenh.,
2. Arch. f. Ophth. (von
3. Arch. f. Ophth. (von

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fact that the periphery of the cornea is involved and that the corneal surface is smooth and shiny.

HISTOLOGY OF THE AFFECTION

Fragments of the diseased tissue have been studied histologically by Groenouw,[2] Fuchs,[3] Chevallereau,[8] and Wehrli.[9] The only report based on the examination of the entire globe is the recent one of Paderstein.[10] Groenouw's specimens showed a foreign substance lying partly isolated and partly in large masses in the substantia propria of the cornea. Just beneath the epithelium the material appeared finely granular and exhibited a certain parallel or interlacing arrangement. It had the appearance of a foreign substance interposed between the corneal fibers. Adjacent to the deposits the corneal corpuscles were deformed and greatly increased in numbers. There was no change in the epithelium or Bowman's membrane. From the chemical reactions of the amorphous substance Groenouw was led to believe that it was of a hyaline nature. The presence of this substance he explains on two grounds: either it was a transformation product of the corneal substance or a foreign mass deposited in it. He admits the possibility of a combination of the two processes.

In Case 6 of Fuchs' series, a fragment of the corneal tissue from the pupillary area, 4 mm. in diameter and 0.25 mm. in thickness, was excised with a corneal trephine. The pathologic appearances, which were confined to the superficial layers of the cornea, were as follows: The epithelium covering the nodules was greatly thinned and the cells flattened. The more superficial corneal lamellæ were swollen and, at sites corresponding to the nodules, were separated. Between the superficial and deeper layers appeared a deposit of amorphous substance, which was not present beneath the nodules. The substance contained isolated corneal fibers and wandering cells. Bowman's membrane could not be seen. When stained with thionin those layers beneath the amorphous deposit took a violet color, instead of the usual blue-green of normal corneal tissue. There appeared then four alterations from the normal: (1) swollen appearance of the upper corneal layers throughout; (2) fibrillation of these layers in limited areas; (3) a deposit of amorphous substance; (4) a change of the underlying lamellæ. Fuchs assumed a metabolic change in the superficial layers leading to the formation of a pathologic fluid. This fluid brought about a swelling of the superficial layers, and, accumulating between the lamellæ, separated and finally destroyed them. He was unable to reconcile the anatomic findings in his case with those of Groenouw and others and was forced to adopt the hypothesis that etiologically and anatomically different processes gave rise to clinically indistinguishable corneal conditions. He concludes that the disease is due to a general, as yet unknown, nutritional disturbance of which the sole expression so far observed is the eye disease.

Chevallereau[8] found crystals of sodium urate lying between the superficial corneal layers.

Paderstein[10] reports the only histologic examination of the entire globe in a case of nodular opacity of the cornea. He found thinning of the epithelium and altered relations of the round and cylindrical cells. The space of the missing cells was filled with a homogeneous hyaline substance, which also appeared on or slightly separated from Bowman's membrane. In places the nodules appeared to be made up of layers of hyaline "like the flakes of an onion." Elsewhere the hyaline assumed a fibrous appearance. Bowman's membrane varied in thickness and was pressed together by the overlying nodules. In places a sharp differentiation between the hyaline and Bowman's membrane was not possible. The hyaline lay also on the basal epithelial cells. These, and to some extent other epithelial cells, had separated from neighboring cells. Their nuclei were partly normal, partly degenerated, and vacuolated. There were no pathologic changes in the corneal parenchyma. Paderstein believes that the basal epithelial cell layer was the primary seat of the affection, and outlines the series of pathologic events as follows: A degeneration of the epithelial cells resulted in the formation of hyaline. The nodules and projections were formed by agglomeration of degenerated cells. Between the cell groups, which had passed through a complete transformation, were scattered some in which the degenerative process was not completed. Thus are to be explained the cells and cell remains in the spaces between the layers of the deposit.

From the above descriptions it can readily be seen that the histologic findings, though presenting some points of similarity, are widely at variance in others. Entirely unrelated to any appearances described by other observers are the findings of Wehrli.[9] This author encountered the disease in two brothers, one of whom had passed through an attack of tuberculous peritonitis. He excised some of the nodules and introduced them into the anterior chamber of a rabbit. There was a sharp reaction with the appearance of a transient yellowish exudate around the fragments, but nine months later the rabbit's eyes were apparently normal. The histologic findings included enlargement of a portion of the fixed corneal cells and increase and regressive processes in a number of the same. The large cells were arranged in groups and bore a striking resemblance to the histologic disposal of the cell nests of epithelioid nodules of tuberculous or syphilitic granulomata. Furthermore, there were found large cells with several nuclei, similar to giant cells. The connective tissue fibers had a sort of cicatricial character. Those next to the so-called tubercles were granular and homogeneous. An amorphous substance deposited in the superficial layers was regarded by Wehrli as necrotic débris from the destruction of tuberculous nodules. By the Ziehl-Nielson method Wehrli found, after long search, two apparently segmented, slightly curved bacilli, coloring faintly red, which he believed to be tubercle bacilli.

In view of the extraordinary rarity of the affection, and also of Wehrli's dictum that every observed case deserves recording, I venture to present the following typical example of nodular opacity of the cornea:

REPORT OF CASE

General History.—R. V. O., aged 27, male, married, came under observation Oct. 30, 1908. His mother died of tuberculosis of the lungs at the age of 40, the patient being 10 years old at the time. A maternal aunt also died of the same disease. As a young boy the patient was perfectly healthy. At the age of 9, he fell out of a swing and landed on his back. The following day a "ridge" appeared around the waist, not accompanied by pain. This remained and two or three weeks later a swelling appeared on the left hip, which was lanced and discharged pus. Other swellings of a similar nature appeared to the right of the sacrum near the coccyx and over the left gluteal muscles. All these swellings were lanced and discharged pus for several years, finally healing when the

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8. France méd., May 2, 1891.
9. Ztschr. f. Augenh., 1905, xiv, 322.
10. Klin. Monatsbl. f. Augenh., February, 1909, p. 156.

The treatment of the condition should be directed to the counteraction of the specific poison by means of inunctions. Sutherland suggests splints and local applications of mercurial ointment, which he believes to be of special value since he has seen pseudoparalysis develop while child was taking general syphilitic treatment.

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Our knowledge of the condition was considerably extended by Fuchs[3] on the basis of eight carefully observed cases. He found that the trouble showed a special predilection for young men; (11 males, 1 female, in the 12 cases in the literature up to 1902). It was characterized by: (1) considerable roughness of the corneal surface; (2) gray, roundish or irregular opacities situated in the pupillary area and projecting above the corneal surface; (in general the larger irregular masses were surrounded by smaller roundish ones, the latter exhibiting a circular arrangement); (3) a faint diffuse opacity of the rest of the cornea which, under high magnification, resolved itself into very tiny punctations. The configuration of the opacities slowly altered in the course of years.

The extreme rarity of this disease is attested by the fact that Fuchs encountered the condition only eight times in a material comprising upwards of 250,000 eye cases. At present writing the literature contains only 22 authentic cases. (Groenouw 2, Fuchs 8, Holmes-Spicer 2, Chevallereau 1, Krukow 3, Gillius 2, Wehrli 2, Treacher Collins 1, and Paderstein 1.)

SYMPTOMATOLOGY

The disease is ushered in by moderate photophobia, epiphora, and occasionally a foreign body sensation. There is no true pain but only a sense of ocular discomfort. These signs are accompanied by diminution of visual acuity. Throughout the long course of the disease there is a conspicuous absence of active inflammatory appearances, although now and again a transient redness, accompanied by photophobia, will manifest itself. The course of the disease is essentially chronic.

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[*] Read in the Section on Ophthalmology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Arch. f. Augenh., xxi, 281-289.

[2] Arch. f. Ophth. (von Graefe's), xlvi, 85.

[3] Arch. f. Ophth. (von Graefe's), 1902, liii, 423.

[4] Wien. klin. Wchnschr., 1889, No. 34.

[5] Wien. klin. Wchnschr., 1889, p. 613.

[6] Encycl. Franç. d'ophth., v, 949.

[7] Centralbl. f. prakt. Augenh., 1904, p. 1.

HISTOLOGY OF THE AFFECTION

Fragments of the diseased tissue have been studied histologically by Groenouw,[2] Fuchs,[3] Chevallereau,[8] and Wehrli.[9] The only report based on the examination of the entire globe is the recent one of Paderstein.[10] Groenouw's specimens showed a foreign substance lying partly isolated and partly in large masses in the substantia propria of the cornea. Just beneath the epithelium the material appeared finely granular and exhibited a certain parallel or interlacing arrangement. It had the appearance of a foreign substance interposed between the corneal fibers. Adjacent to the deposits the corneal corpuscles were deformed and greatly increased in numbers. There was no change in the epithelium or Bowman's membrane. From the chemical reactions of the amorphous substance Groenouw was led to believe that it was of a hyaline nature. The presence of this substance he explains on two grounds: either it was a transformation product of the corneal substance or a foreign mass deposited in it. He admits the possibility of a combination of the two processes.

In Case 6 of Fuchs' series, a fragment of the corneal tissue from the pupillary area, 4 mm. in diameter and 0.25 mm. in thickness, was excised with a corneal trephine. The pathologic appearances, which were confined to the superficial layers of the cornea, were as follows: The epithelium covering the nodules was greatly thinned and the cells flattened. The more superficial corneal lamellæ were swollen and, at sites corresponding to the nodules, were separated. Between the superficial and deeper layers appeared a deposit of amorphous substance, which was not present beneath the nodules. The substance contained isolated corneal fibers and wandering cells. Bowman's membrane could not be seen. When stained with thionin those layers beneath the amorphous deposit took a violet color, instead of the usual blue-green of normal corneal tissue. There appeared then four alterations from the normal: (1) swollen appearance of the upper corneal layers throughout; (2) fibrillation of these layers in limited areas; (3) a deposit of amorphous substance; (4) a change of the underlying lamellæ. Fuchs assumed a metabolic change in the superficial layers leading to the formation of a pathologic fluid. This fluid brought about a swelling of the superficial layers, and, accumulating between the lamellæ, separated and finally destroyed them. He was unable to reconcile the anatomic findings in his case with those of Groenouw and others and was forced to adopt the hypothesis that etiologically and anatomically different processes gave rise to clinically indistinguishable corneal conditions. He concludes that the disease is due to a general, as yet unknown, nutritional disturbance of which the sole expression so far observed is the eye disease.

Chevallereau[8] found crystals of sodium urate lying between the superficial corneal layers.

Paderstein[10] reports the only histologic examination of the entire globe in a case of nodular opacity of the cornea. He found thinning of the epithelium and altered relations of the round and cylindrical cells. The space of the missing cells was filled with a homogeneous hyaline substance, which also appeared on or slightly separated from Bowman's membrane. In places the nodules appeared to be made up of layers of hyaline "like the flakes of an onion." Elsewhere the hyaline assumed a fibrous appearance. Bowman's membrane varied in thickness and was pressed together by the overlying nodules. In places a sharp differentiation between the hyaline and Bowman's membrane was not possible. The hyaline lay also on the basal epithelial cells. These, and to some extent other epithelial cells, had separated from neighboring cells. Their nuclei were partly normal, partly degenerated, and vacuolated. There were no pathologic changes in the corneal parenchyma. Paderstein believes that the basal epithelial cell layer was the primary seat of the affection, and outlines the series of pathologic events as follows: A degeneration of the epithelial cells resulted in the formation of hyaline. The nodules and projections were formed by agglomeration of degenerated cells. Between the cell groups, which had passed through a complete transformation, were scattered some in which the degenerative process was not completed. Thus are to be explained the cells and cell remains in the spaces between the layers of the deposit.

From the above descriptions it can readily be seen that the histologic findings, though presenting some points of similarity, are widely at variance in others. Entirely unrelated to any appearances described by other observers are the findings of Wehrli.[9] This author encountered the disease in two brothers, one of whom had passed through an attack of tuberculous peritonitis. He excised some of the nodules and introduced them into the anterior chamber of a rabbit. There was a sharp reaction with the appearance of a transient yellowish exudate around the fragments, but nine months later the rabbit's eyes were apparently normal. The histologic findings included enlargement of a portion of the fixed corneal cells and increase and regressive processes in a number of the same. The large cells were arranged in groups and bore a striking resemblance to the histologic disposal of the cell nests of epithelioid nodules of tuberculous or syphilitic granulomata. Furthermore, there were found large cells with several nuclei, similar to giant cells. The connective tissue fibers had a sort of cicatricial character. Those next to the so-called tubercles were granular and homogeneous. An amorphous substance deposited in the superficial layers was regarded by Wehrli as necrotic débris from the destruction of tuberculous nodules. By the Ziehl-Nielson method Wehrli found, after long search, two apparently segmented, slightly curved bacilli, coloring faintly red, which he believed to be tubercle bacilli.

In view of the extraordinary rarity of the affection, and also of Wehrli's dictum that every observed case deserves recording, I venture to present the following typical example of nodular opacity of the cornea:

REPORT OF CASE

General History.—R. V. O., aged 27, male, married, came under observation Oct. 30, 1908. His mother died of tuberculosis of the lungs at the age of 40, the patient being 10 years old at the time. A maternal aunt also died of the same disease. As a young boy the patient was perfectly healthy. At the age of 9, he fell out of a swing and landed on his back. The following day a "ridge" appeared around the waist, not accompanied by pain. This remained and two or three weeks later a swelling appeared on the left hip, which was lanced and discharged pus. Other swellings of a similar nature appeared to the right of the sacrum near the coccyx and over the left gluteal muscles. All these swellings were lanced and discharged pus for several years, finally healing when the

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8. France méd., May 2, 1891.
9. Ztschr. f. Augenh., 1905, xiv, 322.
10. Klin. Monatsbl. f. Augenh., February, 1909, p. 156.

patient was about 17 years old, leaving large deep scars. For a time the left knee was flexed and the patient had to use a crutch. There was no pain in the joints at any time. At the age of 16 the patient passed several kidney stones, preceded by severe pains in the lumbar region. Six years before he came under my observation he had a severe attack of measles and gonorrhea three years later—mild attack, no complications. He positively denied syphilis. For the past ten years he had been exceedingly healthy, though troubled with a winter cough. His average weight was 135, maximum 150 (present weight.)

General Examination.—I am indebted to Dr. L. M. Warfield for the general physical examination. This showed a puckered scar on the left groin three inches in length, one on right groin, one large deep scar opposite the left trochanter, one on each side of the upper part of the sacrum, small one to the right of the coccyx, one puckered scar below the edge of the gluteus maximus. At the lowest lumbar spine the bones were thickened; there was no pain, no limitation of motion, slight limitation of adduction. The lungs and heart were normal. The scars were typical tuberculous cutaneous scars. There was no evidence of syphilis.

Ocular History.—About three years before the time of examination the patient noticed a sandy or gritty sensation accompanied by slight epiphora and photophobia and found that his sight was growing dim. There was no noticeable redness and at no time any true inflammatory signs. A year later he consulted an oculist who used various local medicaments and gave mercury by the mouth. Vision grew slowly worse, though there were transient periods of slight improvement.

Ocular Examination.—There was no conjunctival or ciliary congestion in either eye. R. V. 18/150. L. V. 18/96. Examination with the binocular loupe disclosed five or six, very irregular, rather ill-defined grayish masses occupying the center of the right cornea. These masses were, in general, grouped in the form of an ellipse, the center of which was occupied by a nebulous area. The left cornea presented much the same appearance, the opacities being of irregular shape, rather more sharply defined than in the right eye and arranged in the form of a flattened ellipse. The center of the ellipse was rather clearer than in the right eye. With the aid of the Zeiss corneal microscope a very beautiful picture presented itself. In the right eye (Fig. 1), the irregular masses appeared fluffy, like cumulus clouds, with ill-defined margins, shading into relatively clear cornea. The masses could not be resolved into separate dots, but appeared quite homogeneous. Where two separate masses lay near together there was a decided tendency for them to merge or coalesce. The tissue occupying the center of the ellipse was distinctly nebulous. Here and there, the epithelium over the nodules appeared elevated, so that it formed a tiny facet and reflected a laterally projected pencil of light. Outside the involved central area the cornea was very faintly nebulous and this cloudiness extended right up to the corneal margin. The lesions were situated in the superficial layers, but here and there appeared to dip well back into the corneal stroma. The iris showed no alteration. In the left eye (Fig. 2) the masses were somewhat better defined than in the right, i.e., the line of demarcation between the individual nodules and the contiguous tissue was better defined. The nodules themselves were not as fluffy as in the right eye but appeared homogeneous. The space between the masses was rather less nebulous than the corresponding space in the right eye. The epithelium over the nodules was elevated and irregular. The periphery of the cornea contained an extremely delicate gray opacity which resolved itself into the finest of dots. The fundus of each eye was normal. Tension normal; pupils equal; pupillary reaction normal both to light and convergence. The general appearance of the cornea is well illustrated by the accompanying pictures. These were drawn, however, some three months after treatment was begun and do not show the distinct internodular opacity in the left eye visible at the first examination. The history of the case, together with the quite typical appearance, left no doubt as to the diagnosis of nodular opacity of the cornea.

Treatment and Course of Disease.—Bearing in mind the clear tuberculous family history, and the unquestioned tuberculous nature of the old cutaneous ulcerations, I was impressed with the possibility that the eye lesion might be of the same nature. It was, therefore, decided to try the effect of a diagnostic injection of tuberculin.

October 31: At 3 p. m., 3 mg. of old tuberculin were injected into the upper left arm. The following day, November 1, 11 a. m., temperature was 98.4 F. There was very slight redness and soreness at the point of inoculation, with some palpable thickening. At 8 p. m., temperature 99 F.

November 2: Arm quite sore; 3 mg. old tuberculin were injected in the right arm.

November 3: Both conjunctivæ were injected and there was some ciliary congestion. Patient complained of much discomfort, increased photophobia and stickiness of the lids. On examination with the corneal microscope the nodules in the right eye especially were denser and more fluffy than at the first examination. R. E. V. 18/192. L. E. V. 18/96.

November 5: Both arms were found to be indurated at the site of the injections. Three mg. old tuberculin were given.

November 6: Patient stated that he had had a bad night; severe headache; now felt quite sick. At 10 a. m., temperature 99.4 F. Large induration at point of inoculation. At 4 p. m., temperature 100.6 F. R. V. 18/75. L. V. 18/38. The corneal microscope now showed a distinct thinning of the cloudy nodules in the right cornea and a diminution in the internodular opacity. The left eye showed a very distinct diminution in the internodular opacity but no noticeable change in the nodules themselves. The patient expressed his surprise at the sudden improvement in vision.

Diagnostic tuberculin injections were suspended and the patient was not seen again until November 12, on which date therapeutic doses were instituted, beginning with 0.01 mg. of old tuberculin. At intervals of three or four days old tuberculin was injected, increasing 0.01 mg. at each dose.

December 3: The dosage was 0.05 mg. and, for the first time, evoked some soreness at the point of injection.

The dosage was reduced to 0.02 and gradually increased at intervals of a week to 0.03, 0.04 and finally 0.055 mg. when treatment was suspended. The therapeutic injections between Nov. 12, 1908, and Jan. 13, 1909, numbered fifteen. At each visit the corneæ were very carefully examined with the corneal microscope and it was possible to note a gradual diminution in the internodular opacity, especially of the left eye.

On March 1, 1909, the masses were decidedly less dense and in the right eye were more sharply delimited than at first. This change in the appearance was accompanied by gradual improvement in vision so that at this date R. V. 18/60. L. V. 18/30. The patient was much gratified with the improvement in vision as he had about made up his mind that he was going blind. Local treatment has been confined to bland collyria and (for a week only) dionin 3 per cent solution. This was suspended, as it provoked a good deal of discomfort. I was anxious to secure a fragment of the cornea for histologic examination but the patient declined any operative interference whatsoever.

I have later learned that the patient's sister, residing in Kentucky, has had defective vision for a number of years. To a letter requesting particulars of the malady she replied that she had been troubled with her eyes for five years. There had never been any inflammation, the main difficulty being defective vision. She had tried several pairs of glasses but found none that helped. "Over the sight of the eyes are several white specks about the size of a pin-head."

We have, then, in a patient with a very clear family history of tuberculosis, who himself had passed through a severe cutaneous tuberculous affection, a typical nodular opacity of both corneæ. The absence of any etiologic factor aside from tuberculosis which might conceivably have given rise to such a process, the general and local reaction to the diagnostic tuberculin test, the lessening of the density of the nodules, the clearing of the internodular opacities and notable improvement in vision under tuberculin therapy, lead me to the belief that this case is an attenuated tuberculosis of the cornea.

Writers subsequent to Wehrli have been disposed to ignore his findings and conclusions, seeming tacitly to assume that because they did not coincide in any particular with those of other observers they must be faulty. In the light of my own case such a point of view seems to me not justified.

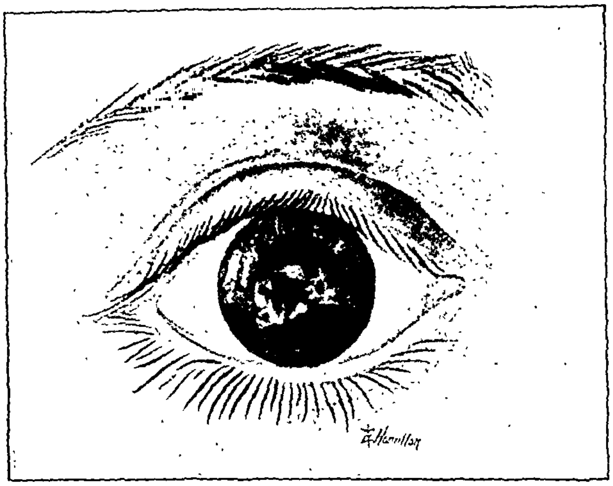


Fig. 1—Nodular opacity of the cornea, right eye.

In the present state of our knowledge with regard to this peculiar affection, we must adopt the view that cases of nodular opacity of the cornea, clinically indistinguishable, may differ with respect to their etiology and histology. It seems proper to regard the cases of Groenouw and Fuchs as instances of a general nutritional disturbance of which the sole expression is the corneal lesion. On the other hand, the histologic findings of Wehrli and the diagnostic and therapeutic efficiency of tuberculin in the case here reported seem to indicate that some of these cases may be, as Wehrli has pointed out, examples of attenuated tuberculosis of the cornea.

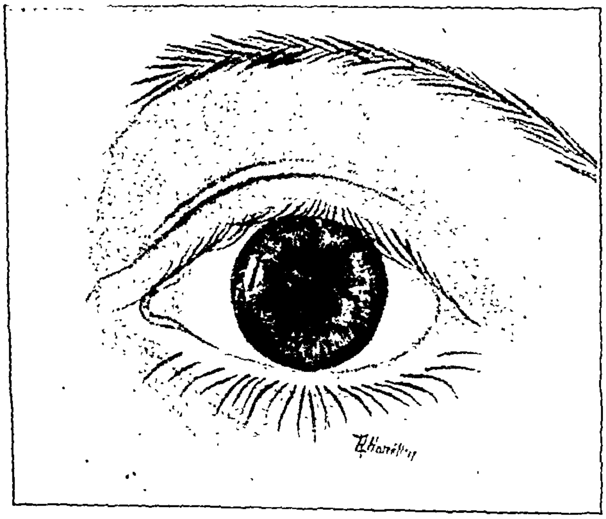


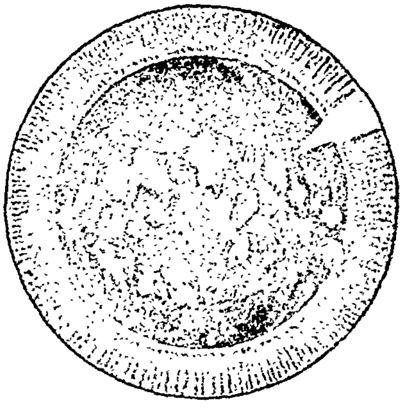
Fig. 2.—Nodular opacity of the cornea, left eye.

626 Metropolitan Building.

ABSTRACT OF DISCUSSION

Dr. Edward A. Shumway, Philadelphia: Any communication which helps to determine the etiology, and to suggest the treatment, of an obscure condition must be considered of great importance. Reports of cases of nodular keratitis are becoming more frequent in ophthalmic literature, especially in Great Britain. Hancock (*Trans. Ophth. Soc. United Kingdom*, 1905, p. 64) reported two in a mother and son, and Dawnay (*ibid.*) reported two in sisters in 1905. Leslie Buchanan (*Ophthalmoscope*, December, 1907) gave the histories of two brothers in whom the disease was apparently arrested, and the vision much improved by iridectomy, and three cases in one family were seen by A. McNab (*Trans. Ophth. Soc. United Kingdom*, 1907, p. 81) and described in the same year. In December, 1908, Folker (*Ophth. Rev.*, xxvii, p. 385) reported seven cases in three generations of one family before the Ophthalmic Society of the United Kingdom, and in the discussion McNab advanced the suggestion that a tuberculous diathesis might be the cause of the condition. Finally, a patient was shown by Zentmayer before the Ophthalmological Section of the College of Physicians, in Philadelphia, in February, 1909, in whom a general but no local reaction to tuberculin was obtained. So that even if we limit the case to the typical nodular form, with discrete opacities in the center of otherwise relatively clear corneæ, and with roughening of the surface, as a result of the elevations of the corneal epithelium, and exclude the cases of grill-like keratitis and family degeneration of the cornea, often considered to be of the same general type, the literature of the subject has greatly increased in recent years.

Most surgeons who have reported cases of nodular keratitis have assumed that some dyscrasia was at the bottom of the trouble, and that the opacities were due to degenerative changes, beginning either in the corneal epithelium or in the superficial corneal lamellæ. If it can be shown that in at least some of them tuberculosis is present, a notable advance will be made in treatment. The entire absence of inflammatory reaction and the absence of cellular infiltration in the majority of cases which have been examined histologically, except as in Paderstein's case, as a secondary condition, have probably prevented the authors from taking tuberculosis into consideration, as the ordinary forms of tuberculous keratitis are attended with stubborn and well-pronounced signs of inflammation. Moreover, the occurrence of a general reaction to tuberculin is not proof positive that a local condition in the cornea is tuberculous, although of sufficient importance to warrant antituberculous treatment. It is imperative for us to examine each new case minutely for the presence of a tuberculous history, or a focus of tuberculosis elsewhere in the body, and especially to try the subcutaneous test with tuberculin. In the presence of such a factor, the treatment with tuberculin injections, commencing with small doses, as Dr. Green has done, should be adopted. If such treatment fails of success, the results obtained by Buchanan by iridectomy should be remembered, in our efforts to check what has been considered a hopelessly progressive form of blindness.



Drawing showing corneal lesions in left eye in case mentioned by Dr. Zentmayer in the discussion. Right eye practically the same.

Dr. William Zentmayer, Philadelphia: I hesitate to report a case in discussion, but I desire to record the condition present in my case [see illustration above] and to report the pathologic findings. The epithelium varies from 20 to 30 cell layers to 2 or 3 cell layers deep. There is a general cloudy patient was about 17 years old, leaving large deep scars. For a time the left knee was flexed and the patient had to use a crutch. There was no pain in the joints at any time. At the age of 16 the patient passed several kidney stones, preceded by severe pains in the lumbar region. Six years before he came under my observation he had a severe attack of measles and gonorrhea three years later—mild attack, no complications. He positively denied syphilis. For the past ten years he had been exceedingly healthy, though troubled with a winter cough. His average weight was 135, maximum 150 (present weight.)

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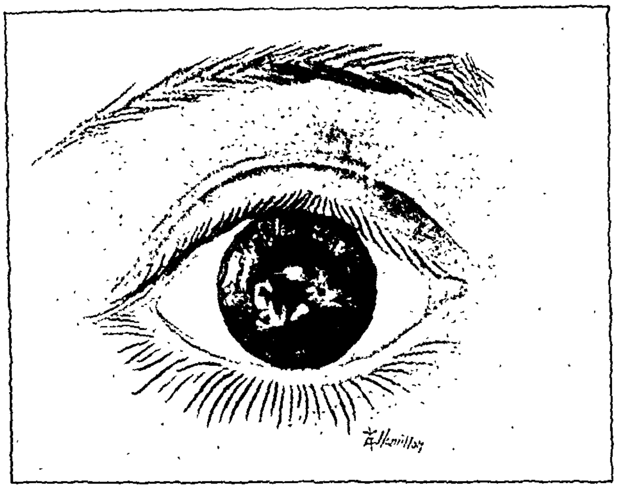

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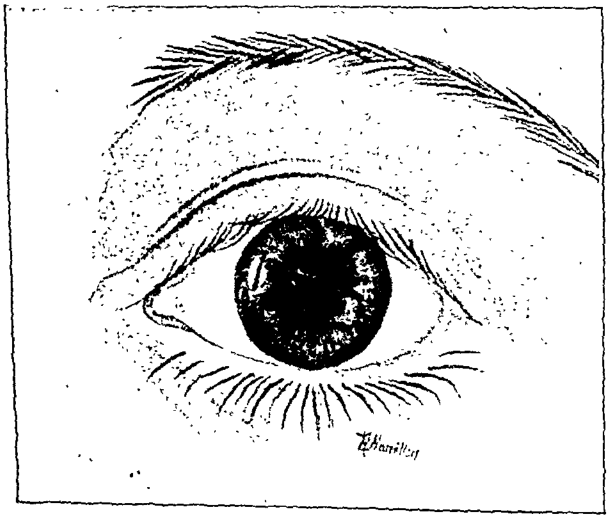

Fig. 2.—Nodular opacity of the cornea, left eye.

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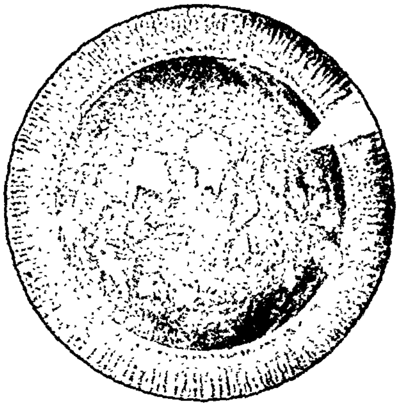

Drawing showing corneal lesions in left eye in case mentioned by Dr. Zentmayer in the discussion. Right eye practically the same.

Dr. William Zentmayer, Philadelphia: I hesitate to report a case in discussion, but I desire to record the condition present in my case [see illustration above] and to report the pathologic findings. The epithelium varies from 20 to 30 cell layers to 2 or 3 cell layers deep. There is a general cloudy degeneration of all the epithelial cells tapering off at the extremity of the specimen into healthier cells which are probably a part of the surrounding clear cornea. The basal cells in one part of the section are approaching horny change, while in others they shade off into the partially homogeneous stroma. The cells of the stroma are degenerated, cloudy, the fibers in some parts have completely coalesced and in this region take a dull bluish stain like nuclear degeneration (hyaline degeneration). Bowman's membrane is absent in places; in others it is broken up and vacuolated. These findings correspond closely to those of Fuchs and Paderstein. The patient had a high-pitched apical note but there were no evidences of tuberculosis.

Dr. O. Wilkinson, Washington, D. C.: I reported a case several years ago in an elderly captain in the army aged about 70. He had been a hard drinker all his life, but there was no history of syphilis or tuberculosis. The opacity in the center of the cornea was highly nodular, while toward the periphery it was not so pronounced. The left eye, which was first affected, practically only had vision to count fingers. In the right eye, more recently involved, there was a typical central nodular opacity about the size of the ordinary pupil, but with dilated pupil he had fairly good vision. No histopathologic examination was made and he declined any form of operation. I suggested iridectomy for the benefit of vision, but that also was declined.

OSTEOMYELITIS OF THE LOWER JAW *

H. H. GERMAIN, M.D.
BOSTON

That true osteomyelitis of the mandible is an infrequent condition is generally conceded. Considering the opportunities offered for infection in this bone, it seems strange that the disease is not more commonly observed.

Many authors have remarked that the lower jaw is closely allied in structure to the long bones. This is partly true for the body, but not at all for the rami. The body differs from the long tubular bones in that teeth germs are present in childhood, while in the adult alveoli exist for the teeth. The rami resemble the flat bones, since their structure is denser and the marrow is of the spongy or diploetic variety. After the teeth have been lost and the alveolar process absorbed the body also assumes the character of the flat bone. In the jaw of the adult containing teeth the presence of large open marrow spaces together with the inferior dental canal favors the spreading of infection in the body of the bone. It appears, in fact, as has been emphasized by Dependorf,[1] that the canalis mandibularis possesses the same characteristics pathologically as the medullary cavity of the long bones. Infection travels along this canal with the greatest ease, while the surrounding medullary spaces act as reservoirs for pus. Hence in the body of the jaw the process is often a diffuse rapidly spreading disease. The above conditions do not obtain for the rami, and here we should expect the disease to be more localized. Kaleibe[2] and Dependorf,[1] who have investigated this condition, state that this is true and that small foci of suppuration are most often found in this portion of the bone in hematogenous infection.

ETIOLOGY

Having the above anatomic conditions in mind, our next task is to review the etiology of the disease. That the infectious agent finds entrance into the bony substance by way of the teeth goes without saying. Probably eight-tenths of all cases arise in this way. Infections from gangrenous pulps or from abscessed teeth are the most common (see Cases 1, 2 and 3). Impacted third molars also furnish a fair number of cases if one can judge from the number reported. Perthes[3] lays great stress on this latter cause. Pyorrhea alveolaris, noma and gangrenous stomatitis furnish occasional cases (Case 4).

Traumata without fracture may act as predisposing factors, as they produce extravasations and disturbances of circulation which furnish an opportunity for the carriers of infection to settle at the point of injury. Trauma resulting in fracture frequently furnishes a direct path for infection from the oral cavity or outer skin, since the majority of these fractures are compounds. Cases 5 and 6 are examples of fractures compound into the mouth, while Case 9 opened into the external auditory canal.

Excluding infection from the mouth or outer skin, the remaining cases are the result of hematogenous infection. These may follow acute infectious diseases, as scarlet fever and typhoid, or may accompany a septicemia from any cause. Hematogenous osteomyelitis is the only example of pure infection, usually of *Staphylococcus aureus* or streptococcus, which we have in the mandible. This refers, of course, to the condition before communication with the mouth is established. All others are necessarily mixed infection from contamination with mouth bacteria. It is probable that long exposure to cold and dampness is a predisposing factor to this disease; the same may be said of metallic poisons.

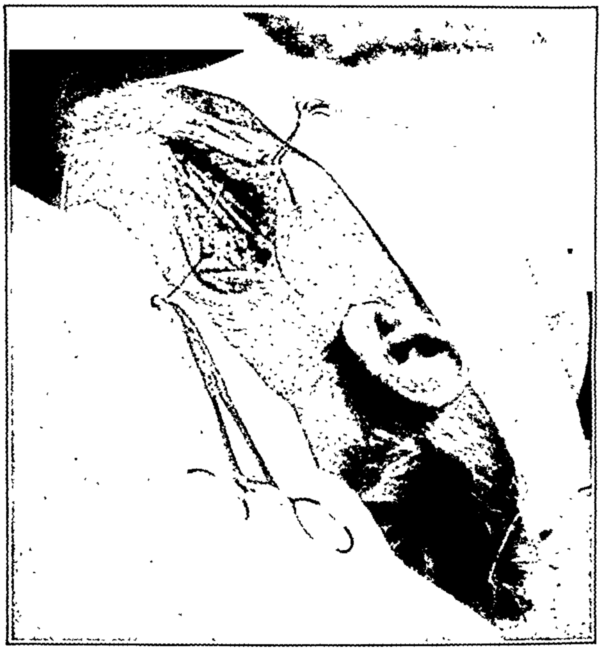

Fig. 1.—Completed operation, showing facial wall of lower jaw removed.

Previous to 1881 so-called idiopathic osteomyelitis was mentioned by Rosenbach[4] and Lannelongue,[5] but in that year Kaleibe pointed out and discussed in detail acute infectious osteomyelitis, recognizing the true nature of the disease.

SYMPTOMS AND COURSE

The sudden spontaneous appearance of gnawing pain is a phenomenon which is well known in all cases of osteomyelitis, regardless of situation. This is usually followed by more or less swelling of soft parts accompanied by fever, and after a time abscesses form and point into the mouth or externally through the cheek or outer skin. With the evacuation of pus temporary relief from pain is observed, but with the progress of the disease more abscesses form with recurrence of symptoms. If the process is diffuse the periosteum is stripped from the bone and the teeth loosen or are extracted to promote drainage of pus. Sooner or later part of the bone dies, and with the casting off of the sequestrum the process usually stops. Not infrequently a different course is seen; the suppuration and swelling are reduced and the disease becomes localized; the jaw thickens and the soft parts become dense and indurated. This localized form occurs most frequently in the ramus of the jaw in hematogenous cases, but it may occur in the body, provided good drainage is established.

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* Read in the Section on Stomatology of the American Medical Association, at the Sixtieth Annual Session, at Atlantic City, June, 1909.

[1] Dependorf: Volkmann's Sammlung klinischer Vorträge, 1906, No. 440.

[2] Kaleibe: Inaug Diss., Halle, 1881.

[3] Perthes: Verletzungen und Krankheiten der Kiefer, 1907.

[4] Rosenbach: Deutsch. Ztschr. f. Chir., x, 492.

[5] Lannelongue: Bull. et mém. Soc. de chir. de Paris, viii, 263.

The diffuse form is, as a rule, very acute, impairing the general health rapidily by septic absorption and also by the fact that the trismus which is present makes it impossible to masticate and swallow food. These patients can open the mouth a quarter of an inch or less, a condition which makes speech, deglutition and mastication difficult or impossible. It often happens that a large amount of pus is swallowed from discharging sinuses in the mouth. How much effect this has on the general condition is hard to estimate, but no one will deny that the circumstance is unfavorable to good digestion.

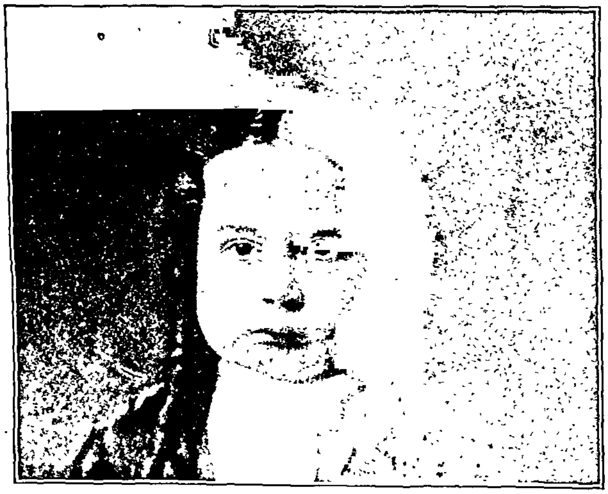

Fig. 2.—From photograph of Patient 3; note shortening of lower jaw.

Exactly what controls the size of the sequestrum in an untreated patient is impossible to say accurately. That a total necrosis does not frequently occur seems to be due to an inherent tendency which the marrow possesses to wall off the disease by the formation of dense bone from the endosteum. We have seen that anatomically and pathologically the long bones and the lower jaw are very similar, and it is to be noted that there is a third analogy, i. e., the uniformity in the conduct of the periosteum after loss of parts of the cortical bone. If diffuse necrosis occurs before complete development the longitudinal growth is, of course, much disturbed, but it is the rule that the diametrical growth will go on and new bone be formed provided the periosteum remains intact. The time required for the formation of a loose sequestrum varies in individual cases from twelve to twenty weeks, at the end of which time a fairly firm involucrum, or shell of periosteal bone, is formed. For some time the involucrum is soft and the muscles of the face and jaw produce a certain amount of deformity by shortening the newly formed mandible if the sequestrum includes the entire diameter of the jaw. As a result of this shortening there is malocclusion of greater or less degree as is seen in Case 3. As a rule it may be stated that the body and ramus will be reproduced, but the alveolar process will not be restored after destruction.

It has been noted that in practically all cases pus finds an outlet on the facial side of the mandible either in the mouth or externally. It is also true that part of the facial wall often becomes necrotic and is cast off as a sequestrum, while the labial side is rarely affected in cases of partial necrosis. The exact reason why the disease selects preferentially the facial side is not perfectly clear, but the large size of the marrow spaces below and to the outer side of the inferior dental canal offers the most likely explanation, since the line of least resistance is in this direction, i. e., toward the facial wall.

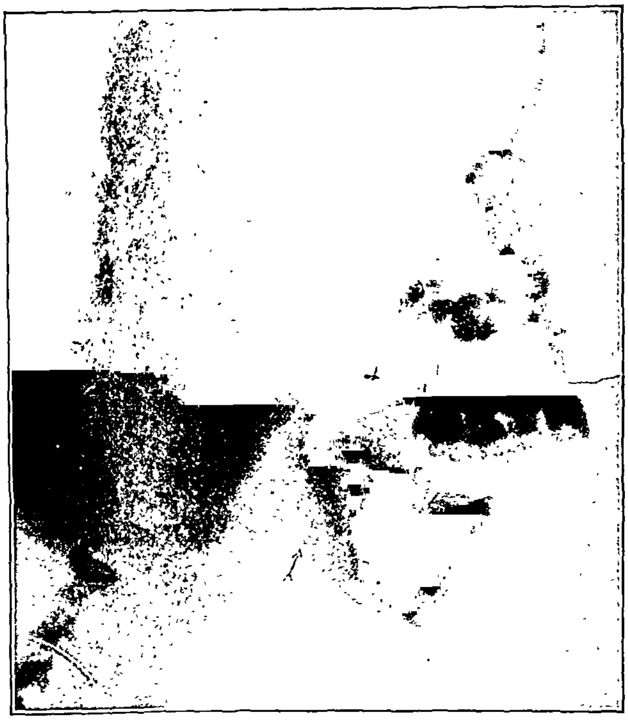

Fig. 3.—From x-ray of Patient 3; shortening of lower jaw apparent here also.

As has been observed, the symptoms in an acute case may subside, sinuses form and the disease take a subacute or chronic course. In this event it is usually found that there is a sequestrum present which must be removed. In the jaw there is also a possibility that there may be a dead tooth which can give the case the appearance of a chronic osteomyelitis. Cases of this kind are frequently seen and a number have been reported in which the external opening of the sinus was at a distance from the original cause in the jaw. The following is an example of one of these cases: Male, age 20, developed spontaneously a small abscess about the center of the anterior border of the right sternomastoid muscle. Abscess was drained, but a sinus persisted which resisted all treatment. Finally a dead second molar was extracted. Immediately blood appeared from the sinus and methyl blue dropped into the cavity left after extraction made its appearance at the external opening. Similar instances are reported by Perthes. In Case 9 of this series there was a sinus in the external auditory canal which on superficial examination resembled otitis media.

These teeth sinuses are particularly frequent in the region of the chin, where a dead incisor or cuspid may be the offending agent. Extraction of these dead teeth may be insufficient for cure, since a pocket of pus and granulations may be present at the apex of the root. Case 10 in the following series is an example.

DIAGNOSIS

Occasional difficulties in diagnosis will be experienced, but they are fortunately rare. Cases of malignant disease with secondary infection are stumbling-blocks which occur now and then. Syphilis and actinomycosis may, of course, confuse. Suppurating dentigerous cysts have been seen often enough to make one consider the possibility. Phosphorus necrosis is extremely rare at the present time. In all of the above conditions, except syphilis, the treatment is surgical and at operation there is rarely any difficulty as to the best course to pursue.

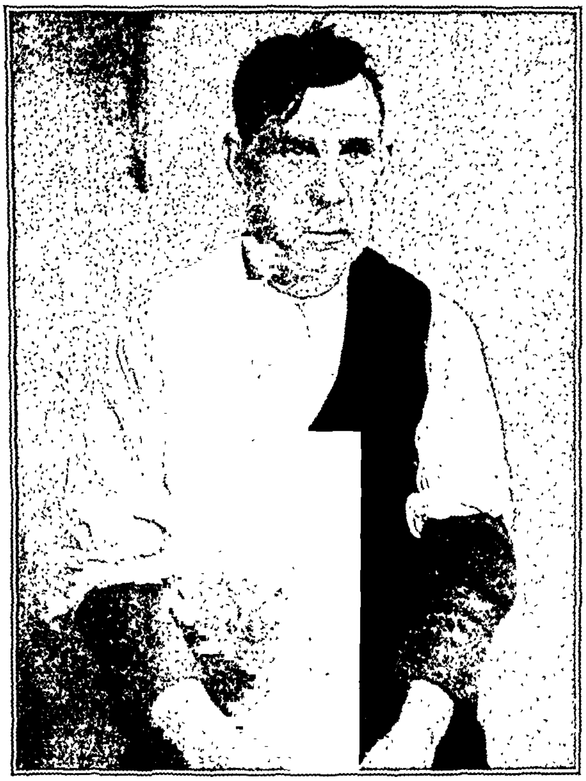

Fig. 4.—From photograph of Patient 6, front view.

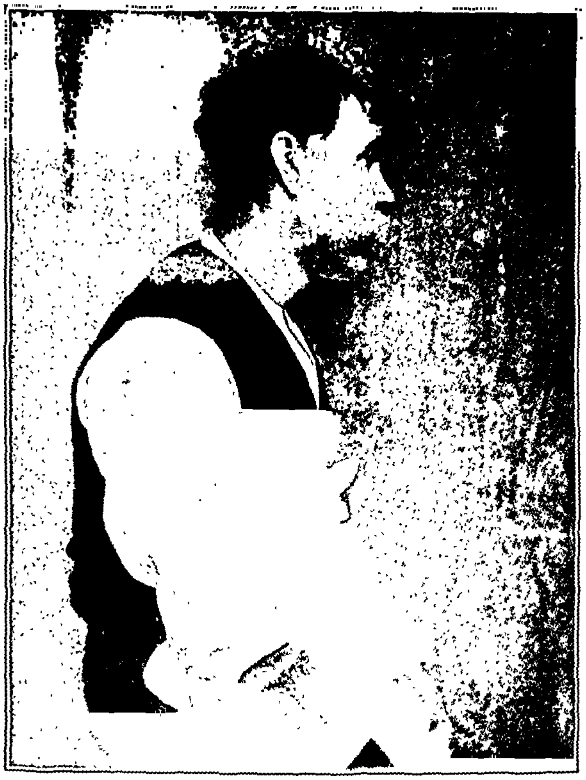

Fig. 5.—From photograph of Patient 6, side view.

The most valuable information may be obtained by the *x*-ray in cases in which the disease is localized, in which there is a definite sequestrum or in which fracture is a starting-point of the disease. In Cases 10 and 11 foci of suppuration were located with accuracy. In Case 6 the *x*-ray showed a fracture which was the starting point of the infection. In Case 3 a definite sequestrum was found to be present. Good *x*-rays are difficult to obtain of the condyle and upper part of the ramus, but when obtained may be of the greatest aid.

A careful study of the plates may rule out sarcoma and syphilis in certain doubtful cases, but at times both cancer or sarcoma accompanied by bone destruction are difficult to differentiate from osteomyelitis by any known means except the microscope.

TREATMENT

In acute cases affecting the body of the mandible the general rule for treatment should be to remove the facial wall of the lower jaw through an external incision, exposing the inferior dental canal (Fig. 1). In this way all large marrow spaces are opened, the best possible drainage obtained, the firm inner wall is left which keeps the jaw in shape and an opportunity is given to retain the teeth. A good example of the result of this procedure is seen in Case 6, in which the disease was checked and all of the teeth retained. That this method is far superior to incisions in the mouth is obvious and needs no discussion. The gravity of the disease demands radical treatment and leaves us little choice as to whether scars should be left or not.

Subacute and chronic cases are a law unto themselves and no definite method of treatment can be laid down for their relief. In general we may say that the treatment of each case is a hunt for diseased teeth, pockets of pus and sequestra. Sequestra representing the entire thickness of the jaw should be left until a firm involucrum is formed in order to minimize deformity. These cases need careful watching, as acute exacerbations occur frequently and are troublesome and dangerous.

Trismus is frequently an annoying feature and rectal or nasal feeding may be necessary. Hot applications externally may give some relief from this condition, which is usually a combination of muscular spasm and inflammatory edema.

Lymphadenitis and angina Ludovici may occur at any time. The latter demands immediate surgical intervention.

DEFORMITY

After loss of large portions of the jaw, as in Case 3, a certain amount of deformity results with shortening of the body on the affected side. Certain plastic operations have been devised to relieve this condition and it seems probable that bone might be implanted successfully in order to overcome the difficulty. Up to date I have been unable to find a patient who was willing to undergo the ordeal after recovering from an acute process in the jaw.

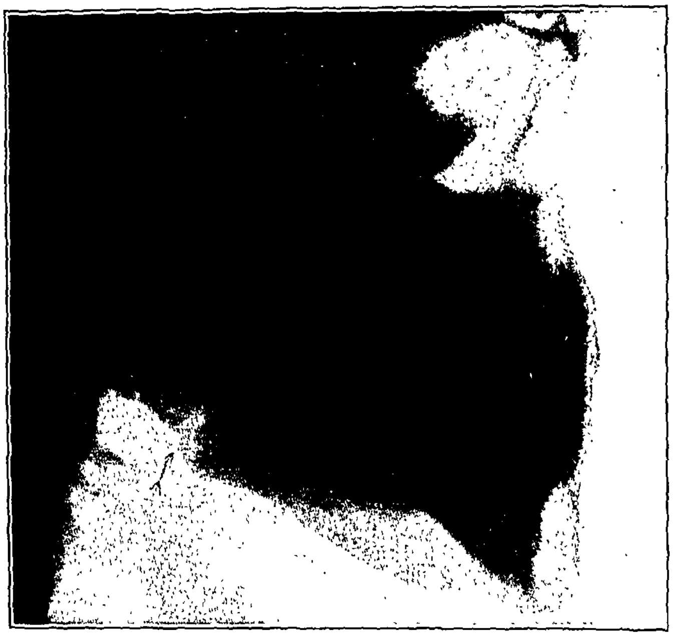

Fig. 6.—From *x*-ray of Patient 6; note fracture.

SUMMARY OF CASES

CASE 1.—A man, aged 41, entered hospital May 5, 1905; *no* history of injury. Illness had begun two weeks previously with pain and swelling in cheek; now showed indurated swelling of lower jaw to the left of the median line the size of half an orange. Operation was performed; chin incised and bone curetted. Patient returned to hospital Oct. 3, 1905; had several sinuses which had never healed. Examination showed two sinuses leading to bone near median line. Incision from one angle of the jaw to the other showed the whole jaw to be necrotic and large amount of bone was removed. Patient returned to hospital again a year later when more dead bone was removed from the left side of the jaw. Since then he has been well.

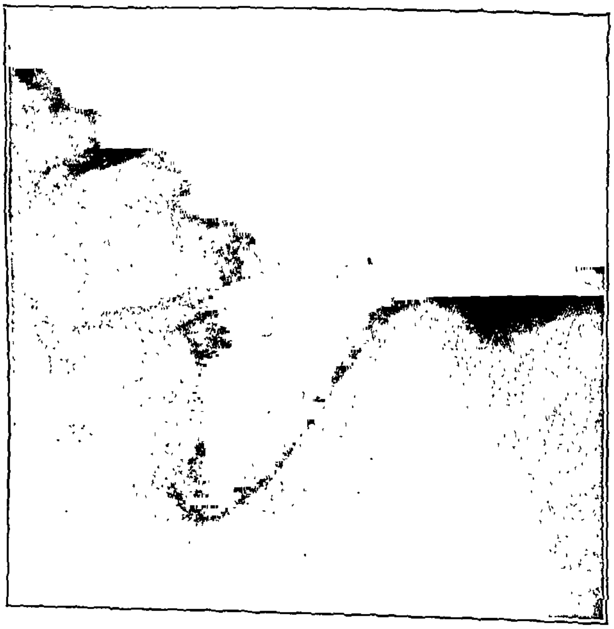

Fig. 7.—From *x*-ray of Patient 9; note absence of condyle and upper part of ramus.

CASE 2.—A man, aged 56, for ten weeks had pain in lower jaw following extraction of a molar tooth, with trismus, painful deglutition and constant pain which was worse at night; he had lost thirty pounds in ten weeks. At operation the sequestrum was *removed from left side of jaw which consisted* of alveolar process and part of body. Uneventful recovery.

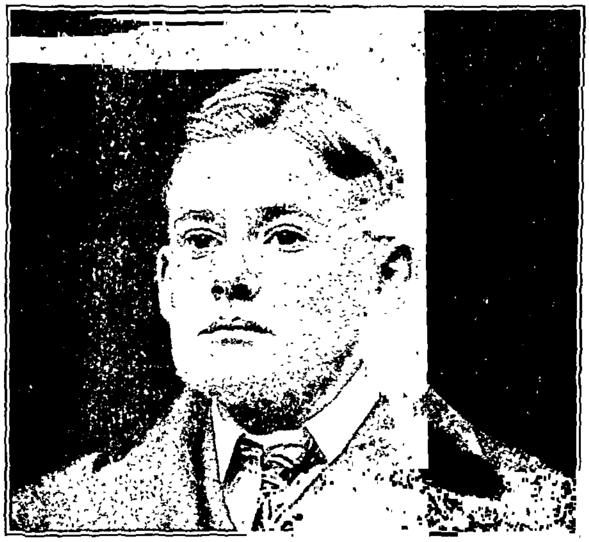

Fig. 8.—From photograph of Patient 10; note swelling on right of lower jaw.

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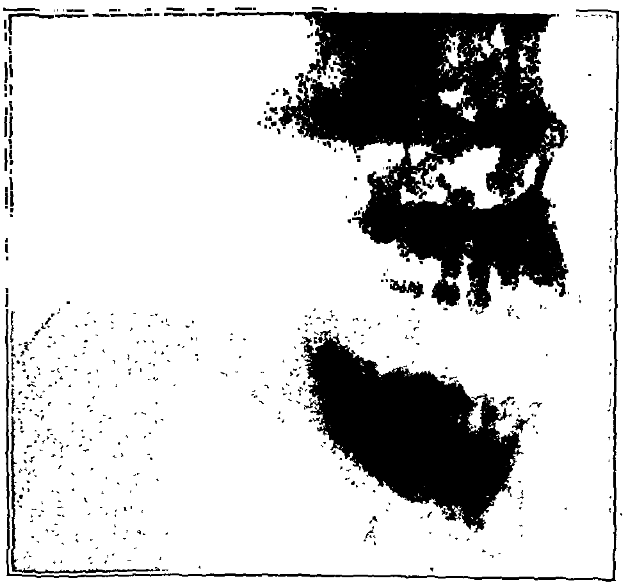

Fig. 9.—From *x*-ray of Patient 10; note thickening of periosteum.

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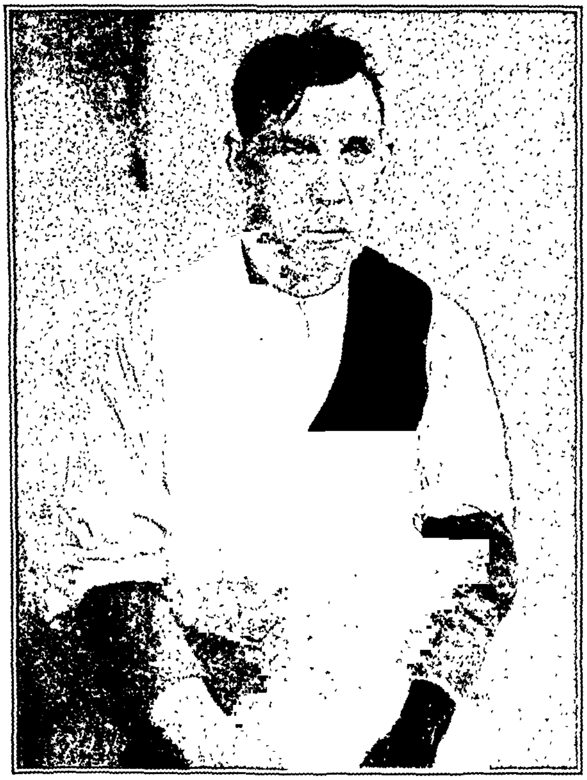

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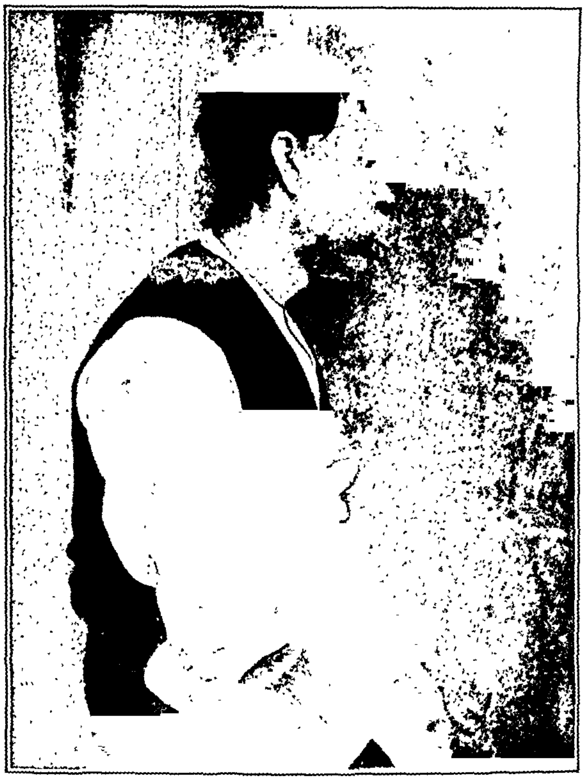

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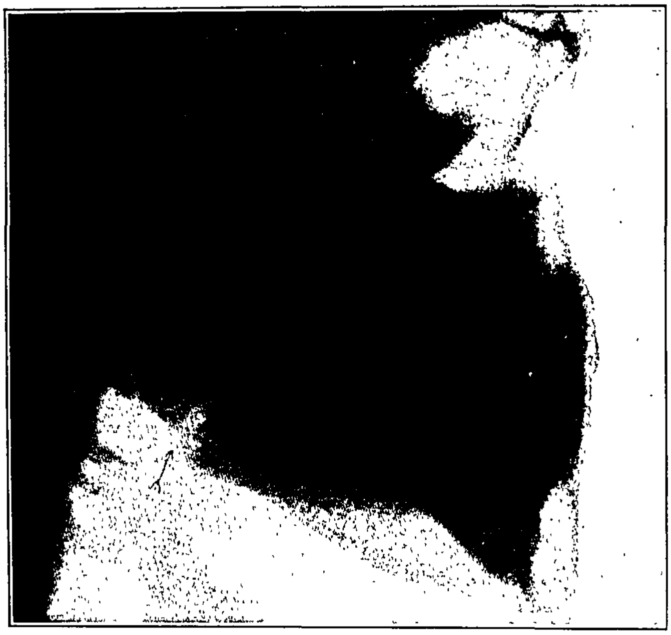

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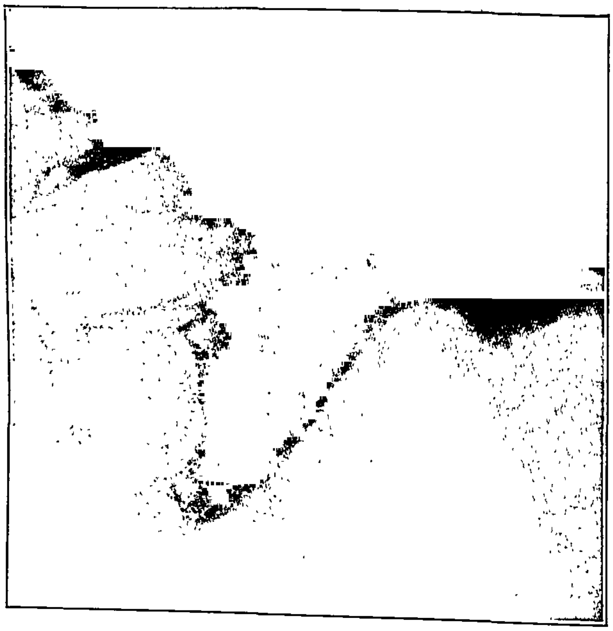

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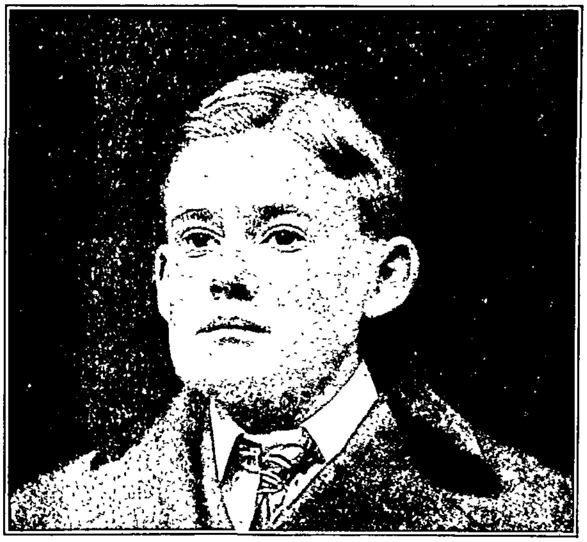

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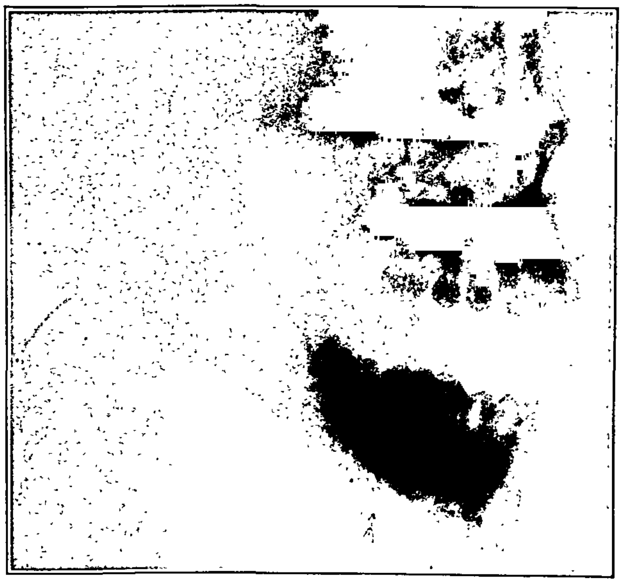

Fig. 9.—From *x*-ray of Patient 10; note thickening of periosteum.

Case 4.—A girl, aged 3, had lost all teeth of lower jaw with alveolar process during an attack of noma. Lower lip was adherent to jaw with mouth about three-quarters of an inch in diameter.

Case 5.—A boy, aged 7, whose lower jaw had been fractured during extraction of a tooth fourteen months previous to the time he came under observation, after this had an abscess under the jaw which was opened several times. At operation sequestrum was removed from left half of body of lower jaw. Recovery was uneventful.

Case 6.—A man, aged 50, received blow on chin Feb. 24, 1809; twenty-four hours later he had acute pain with trismus, difficulty in swallowing and in speech. Examination showed diffuse swelling (Figs. 4 and 5); abscess was opened three days afterward. *X*-ray showed a fracture of the lower jaw through the last molar (Fig. 6). Six weeks later, owing to persistent pain and swelling, the facial wall of lower jaw was removed with good recovery.

Case 7.—A boy, aged 19, six years before operation was kicked in the chin, following which an abscess developed and was opened; sinus was persistent. At operation sequestrum was removed from under incisor teeth; recovery was uneventful.

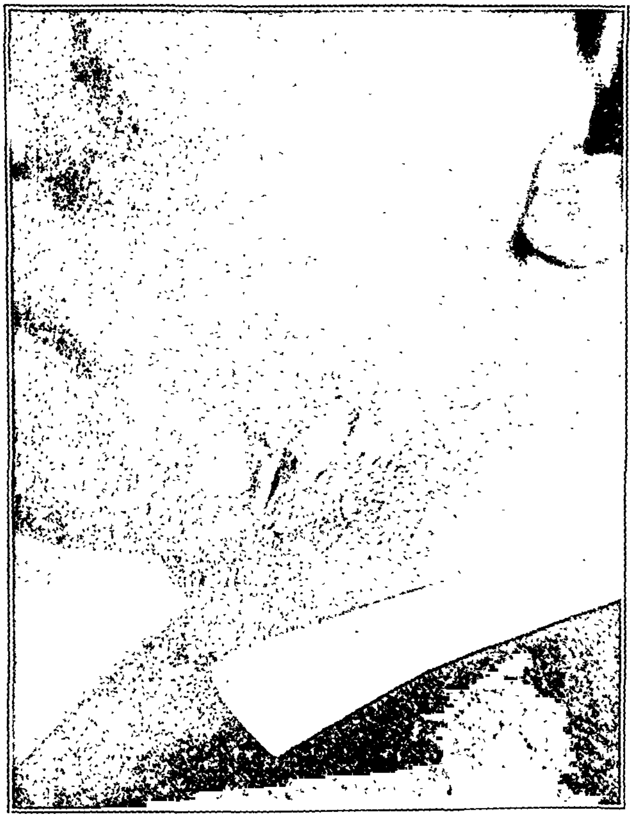

Fig. 10.—From photograph of Patient 11; sinus at angle of jaw.

Case 8.—A girl, aged 11, two and a half years before operation was struck in the chin by a blow of the fist. Following this an abscess developed, which was opened, leaving a persistent sinus. At operation the sinus led into a cavity under the first molar, into which the root projected. Tooth was extracted and cavity curetted; recovery was uneventful.

Case 9.—A man, aged 42, was struck in the chin by a limb of a tree three months before examination; he was rendered unconscious and awoke in hospital. At that time diffuse swelling of left side of face with facial paralysis and bleeding from the left ear were present; the patient was in hospital six weeks. He now sought aid on account of discharging ear with pain in region of ramus of jaw on the same side. Examination showed sinus leading forward from cartilaginous canal to region of glenoid fossa. At operation necrotic condyle was found broken off and lying in zygomatic fossa (Fig. 7). Recovery uneventful.

Case 10.—A boy, aged 13, had had abscessed bicuspid removed six weeks previously. The mucous membrane healed, but persistent swelling of the whole lower jaw and cheek remained (Fig. 8). This swelling varied and at times partly closed the right eye. *X*-ray showed thickening of the periosteum with increased density of the bone (Fig. 9). At operation a cavity, the size of a cherry, containing pus and granulations was found below the bicuspid. In this case there was no sinus. Uneventful recovery.

Case 11.—A boy, aged 20, for ten months had had a discharging sinus which appeared spontaneously after an acute swelling in the region of the angle of the jaw (Fig. 10). *X*-ray showed area of dense bone in the ramus suggesting a sequestrum (Fig. 11). At operation a small bone abscess was found in lower part of ramus.

Case 12.—A woman, aged 29, a few weeks before operation had the lower right bicuspid extracted on account of pain; six weeks before examination had three lower molar teeth extracted for same reason with no relief. Two weeks before examination incisor teeth were removed without relief. Right side of jaw began to swell five months previously; at times the patient had trismus and difficulty in swallowing. Examination showed lower jaw on right swollen and tender; remaining incisor teeth loose. At operation lower incisors were removed and sequestrum consisting of part of body removed through the mouth. One month later another piece of necrotic bone was removed from jaw near the median line.

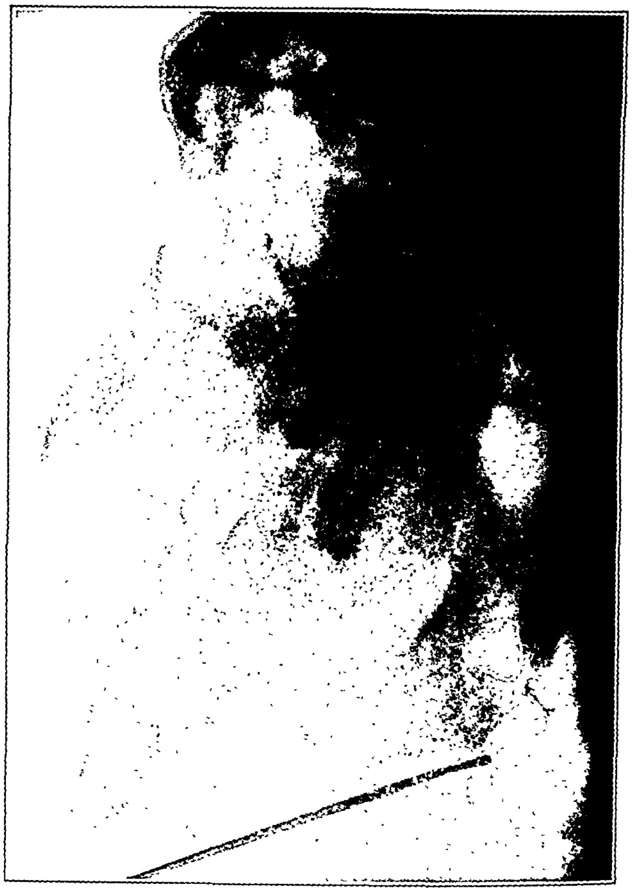

Fig. 11.—From *x*-ray of Patient 11; note focus in ramus.

In closing I desire to thank Drs. Munro and Bottomly for the use of the clinic at the Carney Hospital and opportunity furnished for the study of their cases.

416 Marlborough Street.

ABSTRACT OF DISCUSSION

Dr. Eugene S. Talbot, Chicago: Few physicians and surgeons are able to differentiate conditions due to diseased pulps, death of pulp with alveolar abscess and osteomyelitis due to other causes. There is not a stomatologist who, in his medical life, has not met many surgeons who know nothing of the subject. I could cite 15 or 20 cases in which surgeons have operated on jaws for simple alveolar abscess. The essayist, from his experience, can discriminate between these conditions, which is important in treatment. Patients with osteomyelitis due to dead pulps can be sent to the stomatologist and successfully treated, thus avoiding unnecessary mutilation.

DR. GEORGE V. I. BROWN, Milwaukee: Every point of this paper has been proved by slides. The changes occurring in the bone structure in degeneration and regeneration, and the cases illustrated are exceedingly interesting. I was called the other day to see a little boy in Nashvillle with congenital ankylosis, his jaw was very much drawn to one side, even more than the one shown by the essayist. In another case, a little girl of six with an ankylosed mandible, I operated and gave relief and she can now open her mouth; but I do not really know what caused the ankylosis in either of these cases. I would be glad to have the doctor tell us more of his conclusions, because his radiograph pictures are much clearer than any I have been able to secure.

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THE WASSERMANN REACTION IN ITS RELATION TO DISEASES OF THE CENTRAL NERVOUS SYSTEM *

B. SACHS, M.D.

NEW YORK

Neurologists will appreciate the importance of a method which will enable them to state positively whether or not a suspicion of syphilis is justified, or whether every thought of syphilitic disease may be eliminated from the consideration of a given case. Just such service as this the complement-fixation test of Wassermann has promised to render. It seemed well worth while to become thoroughly conversant with the method, the details of which will be described by others, and during a period of very nearly one year to submit to this test as many patients as possible suffering from nervous disease, so as to determine whether or not it would be of service in the diagnosis and treatment of nervous and mental disorders. Shortly after the publication of the investigations of Wassermann, Plaut, Bruck, Neisser, Georg Meier, Porges, Taylor, Citron and others, the inference was drawn that the Wassermann reaction would be of great service in the diagnosis of locomotor ataxia and general paresis—the two diseases which have long since been held to be due to preceding syphilitic infection. Dr. Nonne,[1] of Hamburg, whom we are fortunate enough to have with us to-day, was among the first to make the attempt to determine the general value of the Wassermann reaction in neurologic practice. In this country Drs. Noguchi, Castelli, Gay, Butler, Swift, and Fox have taken up the Wassermann test. I have felt from the very beginning that, while it might be desirable to have further corroborative evidence in tabes dorsalis and dementia paralytica, such corroborative evidence is not often needed and that it would be much more important, as my own hospital experience has taught me, to possess a test which would help to establish the differential diagnosis between a number of other conditions. It seemed much more important, for instance, to be able to differentiate between disseminated sclerosis and cerebrospinal syphilis, between a central gliosis or a specific central myelitis; to decide whether the symptoms of intracranial pressure were due to malignant neoplasm or to a gummatous meningitis; and it was for the purpose of determining the value of the Wassermann test in this larger group of cases that liberal use has been made of the reaction in cases coming under my notice in my hospital[2] as well as in private practice.

First, a few words as to the reaction. It has shared the fate of all new diagnostic methods in receiving either excessive praise or excessive condemnation. It is only by prolonged experience that we can arrive at the exact truth. The test is cumbersome, is not altogether easy to acquire (laboratory practice of a few months is demanded), and the performance of it calls for an unusual amount of patience and of time on the part of the investigator. It will, of course, be far easier to carry out the test in an established laboratory, but it is not altogether beyond the capacity of a private laboratory such as I have been able to arrange, in association with Dr. Castelli, to whose assistance and cooperation I am deeply indebted. The chief defect of the test is that it is altogether a relative one and that the question of the inhibition of hemolysis can be determined only by a comparison with control tubes in which the syphilitic extract or the specific serum is wanting. There are so many possibilities of error in the performance of the test that credit can be given to the results only if those working by it are known to be thoroughly conscientious and capable. It is entirely natural that attempts have already been made to modify the Wassermann technic so as to place the reaction within easy reach of every practitioner. Among those who have made the laudable attempt to simplify the original reaction has been Noguchi, and you will no doubt hear from him to-day to what extent we may substitute his modification for the original Wassermann method. It is very gratifying, however, to be able to state that in a series of forty-five cases examined by Dr. Castelli and myself, according to the original Wassermann method, and by Dr. Noguchi ac-

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Case 4.—A girl, aged 3, had lost all teeth of lower jaw with alveolar process during an attack of noma. Lower lip was adherent to jaw with mouth about three-quarters of an inch in diameter.

Case 5.—A boy, aged 7, whose lower jaw had been fractured during extraction of a tooth fourteen months previous to the time he came under observation, after this had an abscess under the jaw which was opened several times. At operation sequestrum was removed from left half of body of lower jaw. Recovery was uneventful.

Case 6.—A man, aged 50, received blow on chin Feb. 24, 1809; twenty-four hours later he had acute pain with trismus, difficulty in swallowing and in speech. Examination showed diffuse swelling (Figs. 4 and 5); abscess was opened three days afterward. *X*-ray showed a fracture of the lower jaw through the last molar (Fig. 6). Six weeks later, owing to persistent pain and swelling, the facial wall of lower jaw was removed with good recovery.

Case 7.—A boy, aged 19, six years before operation was kicked in the chin, following which an abscess developed and was opened; sinus was persistent. At operation sequestrum was removed from under incisor teeth; recovery was uneventful.

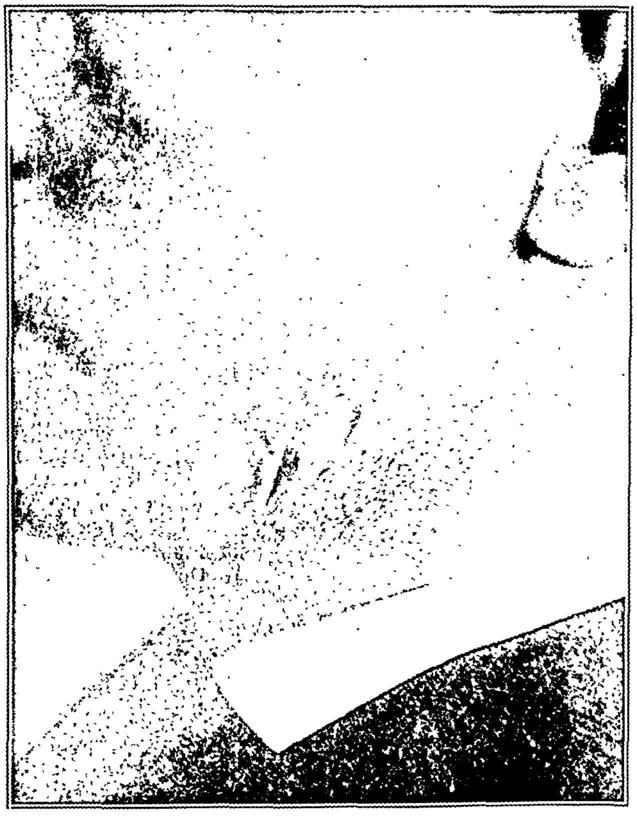

Fig. 10.—From photograph of Patient 11; sinus at angle of jaw.

Case 8.—A girl, aged 11, two and a half years before operation was struck in the chin by a blow of the fist. Following this an abscess developed, which was opened, leaving a persistent sinus. At operation the sinus led into a cavity under the first molar, into which the root projected. Tooth was extracted and cavity curetted; recovery was uneventful.

Case 9.—A man, aged 42, was struck in the chin by a limb of a tree three months before examination; he was rendered unconscious and awoke in hospital. At that time diffuse swelling of left side of face with facial paralysis and bleeding from the left ear were present; the patient was in hospital six weeks. He now sought aid on account of discharging ear with pain in region of ramus of jaw on the same side. Examination showed sinus leading forward from cartilaginous canal to region of glenoid fossa. At operation necrotic condyle was found broken off and lying in zygomatic fossa (Fig. 7). Recovery uneventful.

Case 10.—A boy, aged 13, had had abscessed bicuspid removed six weeks previously. The mucous membrane healed, but persistent swelling of the whole lower jaw and cheek remained (Fig. 8). This swelling varied and at times partly closed the right eye. *X*-ray showed thickening of the periosteum with increased density of the bone (Fig. 9). At operation a cavity, the size of a cherry, containing pus and granulations was found below the bicuspid. In this case there was no sinus. Uneventful recovery.

Case 11.—A boy, aged 20, for ten months had had a discharging sinus which appeared spontaneously after an acute swelling in the region of the angle of the jaw (Fig. 10). *X*-ray showed area of dense bone in the ramus suggesting a sequestrum (Fig. 11). At operation a small bone abscess was found in lower part of ramus.

Case 12.—A woman, aged 29, a few weeks before operation had the lower right bicuspid extracted on account of pain; six weeks before examination had three lower molar teeth extracted for same reason with no relief. Two weeks before examination incisor teeth were removed without relief. Right side of jaw began to swell five months previously; at times the patient had trismus and difficulty in swallowing. Examination showed lower jaw on right swollen and tender; remaining incisor teeth loose. At operation lower incisors were removed and sequestrum consisting of part of body removed through the mouth. One month later another piece of necrotic bone was removed from jaw near the median line.

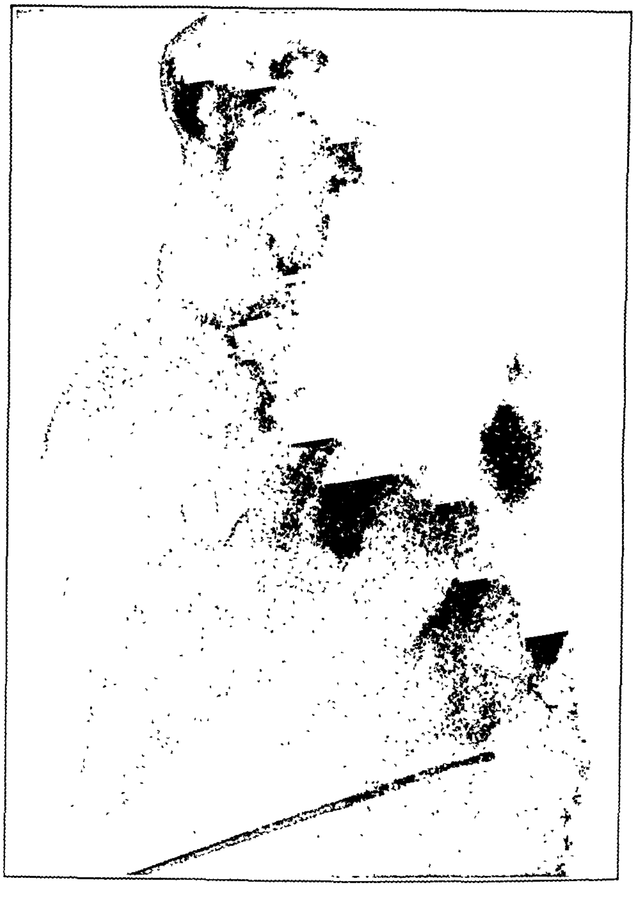

Fig. 11.—From *x*-ray of Patient 11; note focus in ramus.

In closing I desire to thank Drs. Munro and Bottomly for the use of the clinic at the Carney Hospital and opportunity furnished for the study of their cases.

416 Marlborough Street.

ABSTRACT OF DISCUSSION

Dr. Eugene S. Talbot, Chicago: Few physicians and surgeons are able to differentiate conditions due to diseased pulps, death of pulp with alveolar abscess and osteomyelitis due to other causes. There is not a stomatologist who, in his medical life, has not met many surgeons who know nothing of the subject. I could cite 15 or 20 cases in which surgeons have operated on jaws for simple alveolar abscess. The essayist, from his experience, can discriminate between these conditions, which is important in treatment. Patients with osteomyelitis due to dead pulps can be sent to the stomatologist and successfully treated, thus avoiding unnecessary mutilation.

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cording to his recent modification, the reactions have tallied in all but four cases. Such discrepancies as have occurred will no doubt be accounted for by greater perfection in the technic of both methods. Noguchi's method appears to be unusually sensitive, and we trust that he will be able to satisfy all of us that a positive Noguchi reaction means active lues, as I am fully persuaded a positive Wassermann reaction does.

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I must leave the determination of methods and the description of their imperfections, if there be such, to others. I am concerned in this paper with the relation of the Wassermann reaction to diseases of the central nervous system, and, in order to avoid criticism as to the method employed, Dr. Castelli and myself have adhered closely to the technic of the Wassermann school, as we acquired it in Berlin, and have not deviated from the original method in any particular, except that we have substituted the alcoholic extract of the syphilitic fetal liver for the aqueous extract. This is supposed by some to make the reaction less sensitive. Wassermann himself was opposed to the introduction of the alcoholic extract for a time, but this point, I believe, has now been yielded by him and his followers. At all events, using the alcoholic extract has given us most satisfactory results, as was proved by a large series of tests in which all precautions regarding the necessary controls were employed. It is well known, no doubt, by the majority of those present, that the theory on which the reaction was founded has received rather a serious blow, inasmuch as the inhibition of hemolysis was obtained not only when syphilitic liver extract was used, but also when the extract of normal liver was employed and when other lipoid substances were used.[3] Whatever the explanation of this may prove to be, the fact remains that in an unusually high percentage of cases of syphilitic and [illegible] e blood serum, if examined [illegible]'s directions, gives a very definite inhibition of hemolysis, whereas complete hemolysis ensues in the serum taken from patients who are not afflicted with any syphilitic taint.

The conditions of practice and even of my hospital service have made it necessary to restrict my examinations largely to the examination of the blood serum. No doubt Nonne is correct in insisting that the full truth can be obtained only after a consideration of the cellular elements in the spinal fluid, the globulin content, and the specific reaction of blood and serum and of the spinal fluid. In a small number of the cases (15) the spinal fluid has been examined, and in one case of a child, when it was impossible to obtain sufficient blood for the Wassermann test, a blister was drawn—following the suggestion of Dr. Kaplan to one of my assistants —and serum obtained in this fashion. I wish in this communication to give some of the more important results obtained in a series of about 250 cases. In many of these several tests were made.

All investigators are agreed as to the value of a positive Wassermann reaction. If it signifies anything at all, it indicates a more or less active luetic process somewhere in the system. A negative reaction by common consent does not preclude the presence of syphilis and yet a negative reaction, it seems to me, often gives valuable information. In the vast majority of cases in which the negative reaction is obtained, the thought of syphilis may be dismissed. In a large number of others, however, in which a positive reaction has been found present at the beginning of the disease, and in which a negative reaction has been obtained in the course of or after prolonged treatment, it is only fair to assume that the syphilitic virus has been neutralized as a result of the therapeutic measures employed.[4] In this connection it is important to note that a positive Wassermann reaction may often be wanting in spite of the true syphilitic nature of the disease, if intense or prolonged antisyphilitic medication had been employed before the first test was made. As a matter of routine in my hospital practice the rule had been established that neither mercury nor iodids were to be administered to any patient until the Wassermann test had been done. Assuming, then, that a Wassermann reaction may furnish corroborative evidence as to the presence or absence of an active syphilitic virus, let me give in some detail the results obtained in various groups of cases.

I. IN TABES AND GENERAL PARESIS

As I have intimated before, the reaction is hardly needed as corroborative evidence in these two conditions, because in fully 95 per cent. of the cases the diagnosis can be safely made. The chief difficulties have been experienced in the differential diagnosis, in former years, between tabes dorsalis and syphilitic spinal disease simulating tabes, or between general paresis and specific pseudoparesis. But the Wassermann reaction will be expected to be positive in all of these conditions and can, therefore, throw little light on the exact nature of the morbid process. It may be of some value in those cases in which the differential diagnosis has to be made between general paresis and neurasthenia. The preponderance of opinion would seem to favor the idea that if a Wassermann reaction is positive, the disease is necessarily paresis and not neurasthenia. But if we suppose that the neurasthenic individual has had a preceding syphilitic infection, as well he might have, it would not be fair to infer general paresis merely because the patient gives a positive reaction. And this leads me to the first opinion which I wish to express, as a result of my experience, and that is that a positive Wassermann reaction implies an active luetic process somewhere in the system. Any inference beyond this point seems here hardly to be justifiable. I can in this way account for the discrepancy between the figures published abroad regarding tabes and general paresis and those which have been obtained by Dr. Castelli and myself. We have not found a positive reaction to be universally present in general paresis and almost universally present in tabes, as has been published by so many writers abroad. The presence or absence of the reaction, even in tabes and general paresis, depends more or less on the active luetic virus and less on the terminal cortical or spinal cord changes which are responsible for the symptoms of general paresis or of tabes dorsalis. Our own results in tabes and general paresis have been as shown in the accompanying table.

In this series of 28 cases of tabes, 18, or 64.3 per cent., were positive and 10, or 35.7 per cent., were negative. For the purpose of this table I have considered all weak positive cases of the same value as the more positive ones. This percentage is a little lower than that of some of the former investigators, though it is even a little higher than the statistics of Hoehne,

who found a positive reaction in 60 per cent. of 45 cases of tabes, but he has in his list 12 cases of doubtful tabes in which there was a positive reaction in 41.7 per cent. In our list we have had no doubtful cases of tabes, and I take it that in every neurologic clinic there will surely not be 25 per cent. of doubtful cases of tabes dorsalis as there are in this list, which has been issued from a dermatologic and not a neurologic clinic. Wassermann and Plaut found a positive reaction in 70 per cent. of their tabic patients; others claim as high as 90 per cent., and Nonne apparently obtained a positive reaction in 90 per cent. of the blood examinations and 50 per cent. in the examinations of the spinal fluid. Our own figures are, therefore, in general agreement with those who place the percentage somewhere between 65 and 70 per cent. The character of the patients has much to do with the percentages of the reaction. Of the 28 cases of tabes referred to in this paper, 19 were observed in my private practice, and of these at least half were patients who had been under constant observation over a period varying between three and ten years and all of them had received much treatment. Even before the importance of the Wassermann reaction had been disclosed I had been in the habit of subjecting my tabic patients to a course of sublimate injections at least twice a year. This will account for the fact that of the nine negative cases of tabes in my series seven were cases of patients who had been subjected to this line of treatment. It can, therefore, be seen readily enough that if I were to tabulate only hospital cases and those seen for the first time during the past year the percentage of positive reactions would be very much higher. It is also worthy of note that all the female tabic patients, as well as all the female general paretics, gave a positive reaction. A reaction which was positive in a number of tabic patients before treatment was begun gave a negative reaction after a course of several weeks' treatment had been persisted in.

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[3] Professor Kopp (München med. Wchnschr., May 11, 1909) has endeavored (I think, in vain) to minimize the universal enthusiasm regarding the clinical value of this method. Since writing the above, Neisser has spoken frankly of its tremendous importance.

[4] Since writing the above, corroboration of this view has come to me in the article of Hoehne (Berl. klin. Wchnschr., May 10, 1909) entitled: Die Wassermann'sche Reaktion und ihre Beeinflussung durch die Therapie.

TABLE SHOWING THE RESULTS OF THE WASSERMANN TEST IN TABES AND GENERAL PARESIS

Tabes Dorsalis.	Reaction.	General Paresis.	Reaction.	General Paresis.	Reaction.
2	—	7	+	36	—
3	—	8	+	37	—
4	—	9	+	77	—
17	+	10	+	105	—
18	—	12	+	135	—
24	+	14	+	161	+
27	+	15	+	206	weak
30	—	21	—		
33	—	22	+		
35	+	23	—		
38	+	42	—		
47	+	51	+		
55	+	71	—		
64	—	76	+		
87	+	78	+		
100	+	82	+		
101	—	83	—		
107	+	94	+		
110	+	95	+		
119	—	103	+		
136	+	104	+		
142	+	108	—		
145	+	117	+		
146	+	132	—		
164	+	133	—		
193	+	134	—		
194	+	151	—		
208	—	152	+		
		153	—		
		154	+		
		198*	—		

* Juvenile general paralysis

In spite of these high percentages we can not expect much help from the reaction in those cases of spinal or cerebrospinal lues in which the tabic type predominates, for in both these groups of cases a positive reaction might be obtained and yet no light whatever will be thrown on the spinal character of the morbid changes underlying the symptoms. In every case in which a positive reaction was obtained, specific treatment was pushed with much more energy than would otherwise have been the case.

Among these cases of tabes I wish to single out two for special mention. They have both been under observation for many years, the one during a period of four, the other during a period of ten years at least, and both of these were puzzling for a long period because they presented no other symptom than a dissociation of sensation within the distribution of the fifth nerve, the affection in one case becoming bilateral, in the other remaining unilateral. Both these patients—the one a man of 35, the other of 38 years, the one a merchant and the other a machinist—presented positive reactions. The one patient was observed for years before any other symptoms of tabes were in evidence, but to the dissociated sensation of the trigeminal distribution has now been added a loss of knee-jerks and an ataxic gait, whereas the other still presents no other symptom except a difference in the knee-jerks and some vague and occasional lightning pains. After finding a positive reaction in these two cases, strenuous mercurial treatment was given, always by hypodermatic injections, and strangely enough in both these cases the trigeminal symptoms have been distinctly diminished since the hypodermatic injections were begun, and in both the tabic process seems for the present to have come to a standstill.

Of the 31 cases of general paresis, 32.3 per cent. gave a negative reaction and in 67.7 per cent. the reaction was positive. It will be seen that these percentages are almost identical with those obtained in tabes, whereas other observers have recorded higher percentages. The same explanation that I have given in the cases of tabes will hold to a certain degree for general paresis. All of the cases of general paresis were progressive in their symptoms in spite of the mercurial treatment to which the patients had been subjected. Among the list of cases are several that have lasted a period of two years or more, and all of these cases of old standing gave a negative reaction. Another possible explanation for the low percentages of positive reactions in my cases may be the fact that a number of these cases were in the psychopathic ward of Bellevue Hospital, where patients are retained only over a period of four or five days and where the diagnosis often has to be made hastily, so that there is a bare possibility that some of those which have been classed as cases of general paresis might possibly have belonged to the category of doubtful cases. I have placed in a separate series 7 cases which were unquestionably doubtful ones and of these 7, 5 gave a negative reaction and 2 a positive reaction, one of these 2 positive reactions being weak positive. The contrast between these doubtful cases and undoubtedly genuine cases is striking enough to make us appreciate the value of a positive reaction when it is found, but in the case of general paresis again the finding of a positive reaction does not help us materially in making a differential diagnosis between typical general paresis and syphilitic pseudoparesis. A most interesting example of this character was that of a patient (No. 24) who had had tabes for many years and in addition to these symptoms of tabes had passed through attacks which would ordinarily be classified as manic or manic-depressive attacks, with occasional speech disturbances that were a little like those of general paresis and with occasional delusions of an expansive character. The diagnosis of general paresis was made offhand by a num-

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who found a positive reaction in 60 per cent. of 45 cases of tabes, but he has in his list 12 cases of doubtful tabes in which there was a positive reaction in 41.7 per cent. In our list we have had no doubtful cases of tabes, and I take it that in every neurologic clinic there will surely not be 25 per cent. of doubtful cases of tabes dorsalis as there are in this list, which has been issued from a dermatologic and not a neurologic clinic. Wassermann and Plaut found a positive reaction in 70 per cent. of their tabic patients; others claim as high as 90 per cent., and Nonne apparently obtained a positive reaction in 90 per cent. of the blood examinations and 50 per cent. in the examinations of the spinal fluid. Our own figures are, therefore, in general agreement with those who place the percentage somewhere between 65 and 70 per cent. The character of the patients has much to do with the percentages of the reaction. Of the 28 cases of tabes referred to in this paper, 19 were observed in my private practice, and of these at least half were patients who had been under constant observation over a period varying between three and ten years and all of them had received much treatment. Even before the importance of the Wassermann reaction had been disclosed I had been in the habit of subjecting my tabic patients to a course of sublimate injections at least twice a year. This will account for the fact that of the nine negative cases of tabes in my series seven were cases of patients who had been subjected to this line of treatment. It can, therefore, be seen readily enough that if I were to tabulate only hospital cases and those seen for the first time during the past year the percentage of positive reactions would be very much higher. It is also worthy of note that all the female tabic patients, as well as all the female general paretics, gave a positive reaction. A reaction which was positive in a number of tabic patients before treatment was begun gave a negative reaction after a course of several weeks' treatment had been persisted in.

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3	—	8	+	37	—
4	—	9	+	77	—
17	+	10	+	105	—
18	—	12	+	135	—
24	+	14	+	161	+
27	+	15	+	206	weak
30	—	21	—		
33	—	22	+		
35	+	23	—		
38	+	42	—		
47	+	51	+		
55	+	71	—		
64	—	76	+		
87	+	78	+		
100	+	82	+		
101	—	83	—		
107	+	94	+		
110	+	95	+		
119	—	103	+		
136	+	104	+		
142	+	108	—		
145	+	117	+		
146	+	132	—		
164	+	133	—		
193	+	134	—		
194	+	151	—		
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In spite of these high percentages we can not expect much help from the reaction in those cases of spinal or cerebrospinal lues in which the tabic type predominates, for in both these groups of cases a positive reaction might be obtained and yet no light whatever will be thrown on the spinal character of the morbid changes underlying the symptoms. In every case in which a positive reaction was obtained, specific treatment was pushed with much more energy than would otherwise have been the case.

Among these cases of tabes I wish to single out two for special mention. They have both been under observation for many years, the one during a period of four, the other during a period of ten years at least, and both of these were puzzling for a long period because they presented no other symptom than a dissociation of sensation within the distribution of the fifth nerve, the affection in one case becoming bilateral, in the other remaining unilateral. Both these patients—the one a man of 35, the other of 38 years, the one a merchant and the other a machinist—presented positive reactions. The one patient was observed for years before any other symptoms of tabes were in evidence, but to the dissociated sensation of the trigeminal distribution has now been added a loss of knee-jerks and an ataxic gait, whereas the other still presents no other symptom except a difference in the knee-jerks and some vague and occasional lightning pains. After finding a positive reaction in these two cases, strenuous mercurial treatment was given, always by hypodermatic injections, and strangely enough in both these cases the trigeminal symptoms have been distinctly diminished since the hypodermatic injections were begun, and in both the tabic process seems for the present to have come to a standstill.

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All investigators are agreed as to the value of a positive Wassermann reaction. If it signifies anything at all, it indicates a more or less active luetic process somewhere in the system. A negative reaction by common consent does not preclude the presence of syphilis and yet a negative reaction, it seems to me, often gives valuable information. In the vast majority of cases in which the negative reaction is obtained, the thought of syphilis may be dismissed. In a large number of others, however, in which a positive reaction has been found present at the beginning of the disease, and in which a negative reaction has been obtained in the course of or after prolonged treatment, it is only fair to assume that the syphilitic virus has been neutralized as a result of the therapeutic measures employed.[4] In this connection it is important to note that a positive Wassermann reaction may often be wanting in spite of the true syphilitic nature of the disease, if intense or prolonged antisyphilitic medication had been employed before the first test was made. As a matter of routine in my hospital practice the rule had been established that neither mercury nor iodids were to be administered to any patient until the Wassermann test had been done. Assuming, then, that a Wassermann reaction may furnish corroborative evidence as to the presence or absence of an active syphilitic virus, let me give in some detail the results obtained in various groups of cases.

I. IN TABES AND GENERAL PARESIS

As I have intimated before, the reaction is hardly needed as corroborative evidence in these two conditions, because in fully 95 per cent. of the cases the diagnosis can be safely made. The chief difficulties have been experienced in the differential diagnosis, in former years, between tabes dorsalis and syphilitic spinal disease simulating tabes, or between general paresis and specific pseudoparesis. But the Wassermann reaction will be expected to be positive in all of these conditions and can, therefore, throw little light on the exact nature of the morbid process. It may be of some value in those cases in which the differential diagnosis has to be made between general paresis and neurasthenia. The preponderance of opinion would seem to favor the idea that if a Wassermann reaction is positive, the disease is necessarily paresis and not neurasthenia. But if we suppose that the neurasthenic individual has had a preceding syphilitic infection, as well he might have, it would not be fair to infer general paresis merely because the patient gives a positive reaction. And this leads me to the first opinion which I wish to express, as a result of my experience, and that is that a positive Wassermann reaction implies an active luetic process somewhere in the system. Any inference beyond this point seems here hardly to be justifiable. I can in this way account for the discrepancy between the figures published abroad regarding tabes and general paresis and those which have been obtained by Dr. Castelli and myself. We have not found a positive reaction to be universally present in general paresis and almost universally present in tabes, as has been published by so many writers abroad. The presence or absence of the reaction, even in tabes and general paresis, depends more or less on the active luetic virus and less on the terminal cortical or spinal cord changes which are responsible for the symptoms of general paresis or of tabes dorsalis. Our own results in tabes and general paresis have been as shown in the accompanying table.

In this series of 28 cases of tabes, 18, or 64.3 per cent., were positive and 10, or 35.7 per cent., were negative. For the purpose of this table I have considered all weak positive cases of the same value as the more positive ones. This percentage is a little lower than that of some of the former investigators, though it is even a little higher than the statistics of Hoehne,

who found a positive reaction in 60 per cent. of 45 cases of tabes, but he has in his list 12 cases of doubtful tabes in which there was a positive reaction in 41.7 per cent. In our list we have had no doubtful cases of tabes, and I take it that in every neurologic clinic there will surely not be 25 per cent. of doubtful cases of tabes dorsalis as there are in this list, which has been issued from a dermatologic and not a neurologic clinic. Wassermann and Plaut found a positive reaction in 70 per cent. of their tabic patients; others claim as high as 90 per cent., and Nonne apparently obtained a positive reaction in 90 per cent. of the blood examinations and 50 per cent. in the examinations of the spinal fluid. Our own figures are, therefore, in general agreement with those who place the percentage somewhere between 65 and 70 per cent. The character of the patients has much to do with the percentages of the reaction. Of the 28 cases of tabes referred to in this paper, 19 were observed in my private practice, and of these at least half were patients who had been under constant observation over a period varying between three and ten years and all of them had received much treatment. Even before the importance of the Wassermann reaction had been disclosed I had been in the habit of subjecting my tabic patients to a course of sublimate injections at least twice a year. This will account for the fact that of the nine negative cases of tabes in my series seven were cases of patients who had been subjected to this line of treatment. It can, therefore, be seen readily enough that if I were to tabulate only hospital cases and those seen for the first time during the past year the percentage of positive reactions would be very much higher. It is also worthy of note that all the female tabic patients, as well as all the female general paretics, gave a positive reaction. A reaction which was positive in a number of tabic patients before treatment was begun gave a negative reaction after a course of several weeks' treatment had been persisted in.

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[3] Professor Kopp (München med. Wchnschr., May 11, 1909) has endeavored (I think, in vain) to minimize the universal enthusiasm regarding the clinical value of this method. Since writing the above, Neisser has spoken frankly of its tremendous importance.

[4] Since writing the above, corroboration of this view has come to me in the article of Hoehne (Berl. klin. Wchnschr., May 10, 1909) entitled: Die Wassermann'sche Reaktion und ihre Beeinflussung durch die Therapie.

TABLE. SHOWING THE RESULTS OF THE WASSERMANN TEST IN TABES AND GENERAL PARESIS

Tabes Dorsalis.	Reaction.	General Paresis.	Reaction.	General Paresis.	Reaction.
2	—	7	+	36	—
3	—	8	+	37	—
4	—	9	+	77	—
17	+	10	+	105	—
18	—	12	+	135	—
24	+	14	+	161	+
27	+	15	+	206	weak
30	—	21	—		
33	—	22	+		
35	+	23	—		
38	+	42	—		
47	+	51	+		
55	+	71	—		
64	—	76	+		
87	+	78	+		
100	+	82	+		
101	—	83	—		
107	+	94	+		
110	+	95	+		
119	—	103	+		
136	+	104	+		
142	+	108	—		
145	+	117	+		
146	+	132	—		
164	+	133	—		
193	+	134	—		
194	+	151	—		
208	—	152	+		
		153	—		
		154	+		
		198*	—		

* Juvenile general paralysis

In spite of these high percentages we can not expect much help from the reaction in those cases of spinal or cerebrospinal lues in which the tabic type predominates, for in both these groups of cases a positive reaction might be obtained and yet no light whatever will be thrown on the spinal character of the morbid changes underlying the symptoms. In every case in which a positive reaction was obtained, specific treatment was pushed with much more energy than would otherwise have been the case.

Among these cases of tabes I wish to single out two for special mention. They have both been under observation for many years, the one during a period of four, the other during a period of ten years at least, and both of these were puzzling for a long period because they presented no other symptom than a dissociation of sensation within the distribution of the fifth nerve, the affection in one case becoming bilateral, in the other remaining unilateral. Both these patients—the one a man of 35, the other of 38 years, the one a merchant and the other a machinist—presented positive reactions. The one patient was observed for years before any other symptoms of tabes were in evidence, but to the dissociated sensation of the trigeminal distribution has now been added a loss of knee-jerks and an ataxic gait, whereas the other still presents no other symptom except a difference in the knee-jerks and some vague and occasional lightning pains. After finding a positive reaction in these two cases, strenuous mercurial treatment was given, always by hypodermatic injections, and strangely enough in both these cases the trigeminal symptoms have been distinctly diminished since the hypodermatic injections were begun, and in both the tabic process seems for the present to have come to a standstill.

Of the 31 cases of general paresis, 32.3 per cent. gave a negative reaction and in 67.7 per cent. the reaction was positive. It will be seen that these percentages are almost identical with those obtained in tabes, whereas other observers have recorded higher percentages. The same explanation that I have given in the cases of tabes will hold to a certain degree for general paresis. All of the cases of general paresis were progressive in their symptoms in spite of the mercurial treatment to which the patients had been subjected. Among the list of cases are several that have lasted a period of two years or more, and all of these cases of old standing gave a negative reaction. Another possible explanation for the low percentages of positive reactions in my cases may be the fact that a number of these cases were in the psychopathic ward of Bellevue Hospital, where patients are retained only over a period of four or five days and where the diagnosis often has to be made hastily, so that there is a bare possibility that some of those which have been classed as cases of general paresis might possibly have belonged to the category of doubtful cases. I have placed in a separate series 7 cases which were unquestionably doubtful ones and of these 7, 5 gave a negative reaction and 2 a positive reaction, one of these 2 positive reactions being weak positive. The contrast between these doubtful cases and undoubtedly genuine cases is striking enough to make us appreciate the value of a positive reaction when it is found, but in the case of general paresis again the finding of a positive reaction does not help us materially in making a differential diagnosis between typical general paresis and syphilitic pseudoparesis. A most interesting example of this character was that of a patient (No. 24) who had had tabes for many years and in addition to these symptoms of tabes had passed through attacks which would ordinarily be classified as manic or manic-depressive attacks, with occasional speech disturbances that were a little like those of general paresis and with occasional delusions of an expansive character. The diagnosis of general paresis was made offhand by a num-

ber of men who had seen the patient and his early death has been freely predicted in each one of the attacks; but, confident of the luetic character of his symptoms and being willing to make a diagnosis of pseudoparesis only and not of the genuine kind, I had predicted his recovery, and he is at present enjoying excellent health, his tabic symptoms being stationary and his mental symptoms for the present being absolutely in abeyance. In this patient the blood examination taken early in January of this year was most positive, and very soon thereafter a violent outbreak occurred. We have not been able to take another reaction since, but the improvement set in as soon as he had been brought under the influence of mercurial treatment. Incidentally it is well to note that there are psychic conditions in tabic patients, and surely in those who have had constitutional syphilis which need not necessarily take the form of general paresis, and this seems to me to be a fact which is often overlooked.

The Wassermann reaction in tabes and in general paresis is of special use only in so far as it tends to corroborate the theory of the specific origin of the two diseases, and also in so far as it gives one good reason to adopt rigid antisyphilitic measures until the character of the reaction has been altered as a result of treatment.

But to pass from tabes and general paresis to other forms of central nervous disease, I will detail briefly some of the experiences of the past year. And here I will refer first to cases in which the diagnosis between disseminated sclerosis and multiple cerebrospinal syphilis was difficult to establish and to another in which it was a question whether the patient was suffering from spinal lues or from amyotrophic lateral sclerosis.

MULTIPLE SCLEROSIS AND MULTIPLE CEREBROSPINAL SYPHILIS

Two patients, both women, one in private practice and the other at the hospital, were under my care. One patient (No. 49) was a woman, 28 years of age, who had been under my treatment a few years ago for a spastic paraplegia with very slight disturbance of the bladder and rectum and slight sensory disturbances involving both lower extremities. There was no involvement of the cranial nerves, her speech was occasionally a little halting, and on extreme moving of the eyes there was a slight nystagmus. There was also a slight ataxic tremor of the upper extremities which might have been interpreted as an intention tremor. At that time a differential diagnosis between multiple sclerosis and multiple cerebrospinal syphilis was not definitely made, although I was inclined to adhere to the suspicion of syphilis in spite of the pupils, which were entirely normal in their reactions. After treatment for a number of months by mercurials chiefly, and some iodids, the patient made a good recovery, and about one year after her dismissal from treatment gave birth to a normal child. In December, 1908, she visited me again complaining of a gradually developing stiffness of the legs; she was able, however, to walk to and from my office and otherwise presented no symptoms. The Wassermann test was made and the reaction was a very positive one. A week later the lower extremities were not only stiff, but distinctly weakened, and from this time on for the following four weeks she experienced great difficulty in getting around. It was not practicable to have her return regularly for injections; she was given large doses of mercury by inunction. After two months distinct improvement set in, she was able to get about again, both the rigidity and the paralysis disappearing. The only thing that was left was a slight unsteadiness in her walk and easy fatigue on exertion. She also complained of numbness in the left hand.

While the recurrence of attacks would have favored the diagnosis of spinal syphilis, it is well known that even in multiple sclerosis such remissions occur, and in this case a positive Wassermann reaction was a great aid in diagnosis.

The other patient (No. 29) is the wife of a physician, whom I have had under treatment off and on for a number of years. She has at various times had transitory attacks of paraplegia, with marked scanning speech and with great increase of the deep reflexes and marked rigidities. The husband is entirely ignorant of any specific infection and was much more inclined to the belief of a disseminated sclerosis than of a specific spinal disease. This patient had been sent to the hospital last year when she had an attack of spastic paraplegia, and after twenty-three injections there was marked improvement, so that she had practically been feeling well during the greater period of the winter. On December 3 of last year, at a time when she had ceased all treatment for a number of months, the Wassermann test was made and the reaction was found to be positive. Following this she was subjected to another course of injections and remained in a tolerable state of health until about a month ago, when she again suddenly became paraplegic, with considerable pains radiating down the limbs, and had again to be sent to the hospital for another course of treatment. Of the specific character of her trouble there can be no doubt.

As a companion-piece to these two patients I might mention another, a young woman, 25 years of age (No. 41), who had while in the hospital a transitory attack of hemiplegia, who presents marked nystagmus, slow, hardly scanning speech, ataxia of the upper extremities, and occasional weakness of the lower extremities, although never so marked that she is compelled to remain in bed or on a chair; but her disease, which I have been able to follow for at least six years, has been characterized by most marked remissions, and, inasmuch as she was a young married woman who had never given birth to children, the differential diagnosis between multiple sclerosis and multiple syphilis was not an easy one to establish. In her case the several tests which were made at varying periods have been negative, and I feel certain that the case will prove to be one of multiple sclerosis and not of syphilis.

The difficulties in diagnosis were quickly cleared up in a hospital case of a woman about 40 years of age who presented marked atrophy of the thenar and hypothenar muscles of both hands, with increase of the reflexes both in the upper and lower extremities. and with some slight involvement of the sphincters and a complete spastic paraplegia of the lower extremities. The disease came on much more suddenly than we are accustomed to see it come on in amyotrophic lateral sclerosis, so that there was some doubt as to whether the case was one of this character or whether it might possibly be a form of cerebrospinal lues. In this case the blood reaction was found positive and the cerebrospinal fluid sent to Dr. Noguchi for examination was reported by him very strongly positive. On the strength of these findings the patient was subjected to marked antiluetic treatment, but she became completely paraplegic, lost control over her bladder and rectum, developed a huge bed-sore and died of the disease within a few weeks. The autopsy revealed a most marked cerebrospinal meningomyelitis specifica. As this was the first one of my series of cases to be examined, it can readily be seen that I was much impressed with the Wassermann test as an aid to diagnosis in doubtful cases.

In addition to these cases, there have been a number of ordinary spastic paraplegias (Nos. 13, 19 and 109). In the first two the reaction was negative and there was no special reason to think that there was any specific element in the case. In the third (No. 109) there were all the ear-marks of syphilitic disease, and an infection years ago was conceded. In this case the blood reaction was positive, and the cerebrospinal fluid also gave a very positive reaction. I make mention of this positive reaction of the cerebrospinal fluid as Nonne and others have failed to get a positive reaction in many of these conditions. Several tests were made of this man; all of them were positive, so that there can hardly be a doubt as to the correctness of the observation. It is well worth adding that in this case lumbar puncture was done at least five times, three times while in the hospital under our own observation, and twice while the patient was at another institution. He experienced so much relief—whether it was subjective or not—from the withdrawal of about 15 c.c. that he asked for repeated lumbar puncture. As no ill effects were observed from this, his wish was granted and he left the hospital very much improved and was ready to resume his work as a motorman.

Let me refer here also to another very remarkable case of cerebrospinal lues (No. 32) that had been under my own care in private practice as well as in the private pavilion in the hospital, with several attacks of hemiplegia and of paraplegia, from each of which the patient —now a man about 33 years of age—had recovered. Last summer this patient was sent to Aix-la-Chapelle and was subjected there to a thorough course of mercurial treatment. He reported to me on October 5, after his return from Aix, when I found him practically well, but for safety's sake continued him on small doses of protiodid of mercury—a drug, by the way, in which my confidence is steadily diminishing. On November 20 of last year he reported at my office, stating that the vision of the right eye appeared blurred. On examination I found a distinct swelling of the nerve and some atrophy. I referred him to Dr. Wiener, who reported that the patient exhibited a distinct specific retinitis and evidences of a retrobulbar neuritis. It was not practicable to give him injections, so he was put on inunctions of mercury. The blood was taken for examination and the reaction was found most positive. After twenty inunctions another test was taken and the reaction was weak positive. After thirty inunctions the reaction was negative and has remained negative since.

There was a further interest in this case, inasmuch as with the improvement in the Wassermann reaction there was also a marked improvement in vision, so that on March 9 I could enter on my records the statement that the patient "reads perfectly with the right eye and all trouble with vision seems to have disappeared." On April 12, however, he developed a weakness in the right leg, reminding him of the condition of the leg during his attack of hemiplegia some years ago. He was at once given another course of treatment, and on May 19 of this year, when he was again seen at my office, he had recovered from the attack of transitory paralysis of the leg, his vision was good, he was able to attend to his work and had practically recovered from this renewed attack of paralysis.

Of all the cases of central syphilitic disease that I have seen this has been the most stubborn, at least of those that showed any tendency to recovery. The Wassermann reaction has been of much aid in the treatment of this patient, and I am so much impressed with its value as an indication of active or inactive lues that I have advised the patient to present himself at least twice a year for a blood examination so as to determine whether or not he needs active antisyphilitic treatment even in the absence of all clinical phenomena.

A case somewhat similar to this (No. 116) was under observation during the winter at the hospital. The patient's chief symptom was a blindness which was suddenly developed, and it was a question whether the blindness was due to a specific disease or possibly to poisoning by wood alcohol. In this case both the blood and the cerebrospinal fluid gave a positive reaction. Under mercurial injections the patient was improved and was finally discharged from the hospital, although his vision had not been completely restored, but he had regained sufficient vision to return to his home. In this case we were well aware that wood alcohol might possibly have caused the condition in a man who had previously been infected with syphilis, but without the positive reaction we would not have had the courage to persist as we did in a prolonged course of mercurial treatment.

IN TUMOR OF THE BRAIN, HEMIPLEGIA AND EPILEPSY

I have no desire to multiply details, but I must refer to the aid rendered by the Wassermann reaction in cases of tumor of the brain or of cerebral conditions in which tumor was suspected. An interesting observation was that on a hospital patient (No. 73) who had had considerable nasal trouble, had been treated by a number of nose specialists in an operative way, and shortly after such a course of treatment developed intense frontal headaches, exquisite tenderness over the frontal bone, slight optic neuritis, without running any considerable fever, except such as might have been accounted for by a slight intercurrent complication. In view of the previous history of nasal trouble and operative interference, it was natural to think of abscess or of a possible intracranial neoplasm or else cerebral lues—a condition which one should never overlook. The patient was under treatment at the time when we were most interested in the Wassermann reaction. The test of blood was taken after he had been in the hospital for a number of weeks, but without specific treatment and a positive reaction was recorded. In view of this—and this was an important matter—every thought of operative interference was abandoned; the man was put on sublimate injections. All his symptoms cleared up and he was discharged, cured, from the hospital after a further stay of about four weeks.

It has become a matter of routine treatment in my service at the hospital to take the Wassermann reaction in all cases of brain tumor before operation is decided on, with a view of eliminating specific cases. I have a record of five such tumor cases in all of which the reactions were negative, and in one of them the reaction of the cerebrospinal fluid was also negative. In a sixth case a positive Wassermann reaction helped us out of a serious diagnostic dilemma. The patient is still in my hospital wards. He is a young man about 25 years of age whose chief symptoms were of a bulbar character; typical bulbar speech, constant drooling from the mouth; rigidity of the neck, intense vertigo, so that the patient had to hold his head inclined to the right, and on any attempt to move it forcibly to the left suffered from intense vertigo. He also exhibited, on looking to the left, a most marked lateral and vertical nystagmus. There was strong suspicion of a tumor either of the cerebellum or in the vicinity of the medulla oblongata, but the only fact that was not in concurrence with this view was the entire absence of optic neuritis; and yet we have all known of the occurrence of cerebellar tumors and of tumors in the vicinity of the foramen magnum, where this growth would have had to be, which are not attended by optic neuritis. The man's condition was becoming rather desperate; he could be fed only by the stomach-tube and seemed to be in great danger of respiratory paralysis, and as a last resort—although I did not think a specific condition probable—a blood test was made which gave a distinctly positive reaction. In view of its proximity to the cerebellum I did not venture to withdraw spinal fluid. As soon as the positive reaction was made out, sublimate injections were given to the patient, and within a week a most astonishing improvement occurred; the patient began to swallow food, the nystagmus was lessened, the vertigo diminished, and he seems now to be on a fair road to recovery; another case in which the Wassermann reaction has proved to be of incalculable value.

In the hemiplegias much assistance was given by the Wassermann test. We neurologists know how much at sea we often have been regarding the nature of an apoplectic attack, and if the onset was such as to give rise to the suspicion of thrombosis, unless the patient were well advanced in years, we have always had to fall back on the theory of a specific endarteritis. I feel that we can depend on the Wassermann reaction to corroborate such a suspicion or to diminish its probability. In the paper which I read before the Association of American Physicians, together with Dr. Collins, on "The Value of the Wassermann Reaction in Cardiac Disease" I reported the case of a hospital patient whose condition was most puzzling. He had a distinct endocarditis affecting both the aortic and the mitral valves. Shortly before entering the hospital he sustained an attack of hemiplegia which was very slow in its mode of onset, entirely without loss of consciousness, and in which the arm and leg were not simultaneously paralyzed. The onset of this did not at all correspond with the theory of embolism due to heart disease. A Wassermann reaction was positive in this patient, and I inferred from this that, although the patient had heart disease, he also had specific endarteritis, and that his attack of hemiplegia was due to thrombosis and not to embolism; another instance, it seems to me, in which the evidence furnished by the Wassermann reaction may be of great diagnostic value.

The Wassermann reaction has been of the greatest help to me in a number of cases of epilepsy in which syphilis was suspected as the only possible cause. Case 128 was one of hereditary lues with epilepsy in which the reaction was positive; and in one case (No. 89), a young man who had acquired syphilis a number of years ago and who gave a positive reaction, had also developed epileptic attacks, the meaning of which was supposed to be in doubt, but with the positive Wassermann reaction I think we need not hesitate to ascribe these spells to brain syphilis.

I have mentioned the cases in which positive reactions have been of great help, but a negative reaction has often been just as instructive, particularly in the case of tumor of the brain, in cases of headaches, and in conditions of disease of the peripheral arteries, more or less resembling Raynaud's disease and erythromelalgia, in which a negative reaction has led me to believe that the suspicion which I once entertained, that these conditions might be of specific origin, can not be defended.

In view of such experiences as I have recorded, I do not hesitate to speak enthusiastically of the value of the Wassermann reaction in neurologic diagnosis. I am certain that within recent years no aid to diagnosis has been given us which can at all equal it in value and in its importance. It should, however, be interpreted merely as a finding corroborating or disproving the suspicion of syphilis, and I would urge that every neurologist acquaint himself personally with the method so that he may learn to employ it and may help to determine by further investigations what the limitations to its usefulness may be, for limitations will surely be found.

I was soon convinced that the Wassermann test was valuable in determining our therapeutic procedures. As a result of my own experiences I would urge that a positive Wassermann reaction is an indication for antisyphilitic treatment; and as regards diseases of the central nervous system, I mean treatment by mercury and preferably by mercurial injections, I have placed reliance on the soluble salts, but I will not differ from those who have a predilection for the insoluble mercurial salts, or who still pin their faith to the iodids. It may be as well, however, to state my conviction that, while I have seen specific headaches and milder specific conditions improve under the administration of iodids, specific myelitis or any serious specific invasion of the cord or brain has, in my opinion, been benefited only by systematic mercurial treatment. These views, which I have held for some time, are, it seems to me, corroborated in the recent interesting statistics of Hoehne, who shows that calomel and sublimate injections appear to be the most efficient. This writer finds that the Wassermann reaction is changed from positive to negative more often after the administration of these two mercurial preparations than after other forms of treatment. If we remember in what haphazard and vague way antisyphilitic treatment has been given for years, both in nervous and in other diseases supposed to be of syphilitic origin, we must welcome a method which gives us some sort of rational basis for our therapeutic procedures. I maintain, therefore, that the Wassermann reaction has a positive value not only as an aid to diagnosis, but also as an aid to treatment.

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THE SERODIAGNOSIS OF SYPHILIS *

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It is my essential purpose to present the results of the analysis of 2,406 blood serums by the complement fixation test, using either Wassermann's or my own method of doing the test. Herewith are given six tables, giving in detail the results of the analysis and of a comparative study of 244 cases of known syphilitic or parasyphilitic conditions in which the Wassermann method and mine are contrasted. I shall also point out briefly the main differences between the Wassermann method and my own, referring to the various other modifica-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

tions in passing. For further details consult my article read before the Section on Pathology and Physiology of this Association.

It is important to bear in mind that the main difference between my system and the Wassermann system lies in my use of a known quantity of amboceptor, while in the Wassermann system we meet a difficulty in the fact that human serum may contain anywhere from 0 to 20 units of natural hemolysin (amboceptor) capable of inducing hemolysin of sheep's corpuscles. This introduces an uncertain factor into the interpretation of the results, inasmuch as an excess of anti-sheep amboceptor leads to hemolysis even in the presence of syphilitic antibody. Any system using foreign corpuscles, such as that of Bauer, Hecht, Stern, and Detre, is equally apt to give fallacious results.

Minor differences often of great importance to the individual doing the test are: (1) in my system it is possible to preserve the various reagents, such as antigen, amboceptor, and, if necessary complement, in stable form, dried on filter-paper and then titrated, ready for use; (2) in my system the quantity of blood necessary for the test is very small, only a few drops; inactivation is not necessary and the blood need not be fresh; (3) the ease with which certain of the reagents can be procured is a factor; in my system human corpuscles are used, and the patient's own cells can be utilized. In all the other methods it is necessary to have a fresh supply of corpuscles, sheep's, horse's, etc., always on hand; (4) all the other methods require a complete laboratory, while any laboratory worker can do my test with a very small equipment.

Table 1 contains a summary of the results obtained by my method. The percentage of positive reactions in these cases of syphilis, manifest or latent, compares favorably with the results obtained by different investigators using the Wassermann system.

TABLE 1.—THE RESULTS OBTAINED BY NOGUCHI'S METHOD IN SYPHILIS, PARASYPHILIS, HEREDITARY SYPHILIS AND SUSPECTS

	Number of Cases.	+	%	—	±
Primary Syphilis	70	65=	92.8	4	1
Secondary Syphilis	197	190=	96	5	2
Tertiary Syphilis	177	159=	89.9	16	2
Early Latent Syphilis	115	87=	75.6	24	4
Late Latent Syphilis	150	119=	79.3	27	4
Under Prolonged Treatment	39	4=	10.2	32	3
Cerebral Syphilis	5	3=	60	1	1
Tabes	125	85=	68	27	13
General Paralysis	15	13=	86.6	2	0
Hereditary Syphilis	17	17=	100	0	0
Suspected Syphilis	172	60=	34.8	96	16
	1082	802		234	46

TABLE 2.—RESULTS OBTAINED BY NOGUCHI'S METHOD IN CASES IN WHICH SYPHILIS IS AN ETIOLOGIC FACTOR OR CAN NOT BE EXCLUDED AS A POSSIBLE CAUSE OF THE CONDITION

	Number of Cases.	+	—	±
Cirrhosis of Liver	7	5	1	1
Ascitic Fluids	21	11	9	0
Aortic Insufficiency	1	1	0	0
Chronic Arthritis	10	2	6	2
Eye Cases	29	14	15	0
Diabetes	5	1	4	0
Eczema	32	1†	31	0
Scleroderma	4	1‡	3	0
Brain Tumor?	8	4	4	0
Central Gliosis?	2	1	1	0
Hemiplegia	8	3	5	0
Spastic Paraplegia	3	2	0	1
	130	46	81	3

† This serum was sent to me by Dr. Howard Fox, who failed to obtain another specimen from the same case.

‡ This serum was sent to me by Dr. Schuyler Clark, who made a report on the same case elsewhere.

Table 2 is made up of cases in which syphilis could not be excluded as an etiologic factor. In many cases in which the diagnosis clinically was syphilis, a positive reaction was obtained, and *vice versa*. In the one case of eczema a second specimen was not obtainable; and in this case the patient could not be further interrogated to obtain, if possible, a history of lues. The possibility of hereditary syphilis in the one case of scleroderma could not be excluded; the mother gave a weak reaction to the test.

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TABLE 3.—RESULTS OBTAINED BY NOGUCHI'S METHOD IN EYE CASES

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Keratitis Interstitialis	12	8	4	0
Iritis (acute)	6	4	2	0
Scleritis	1	0	1	0
Paralysis Exter. Rectus	1	0	1	0
Neuritis Optic	1	1	0	0
Chorioditis Exudative	1	0	1	0
Atrophy Optic	5	0	5	0
Acromegaly with Ocular Symptoms	2	1	1	0
	29	14	15	0

In Table 4 I have reported a number of miscellaneous diseases in which syphilis was probably not a factor. Among these were certain cases of leprosy, malignant neoplasms, tuberculosis, scarlet fever and other exanthemata, in all which diseases positive reactions have been occasionally reported by those using the Wassermann method. It can not be denied that complement is fixed in a large percentage of cases of leprosy; the reasons for this result are as yet unknown. With carcinoma and scarlet fever a positive reaction is rarely obtained. The results here agree closely with those obtained by the Wassermann method.

TABLE 4.—RESULTS OBTAINED BY NOGUCHI'S METHOD IN CASES IN WHICH SYPHILIS CAN BE EXCLUDED WITH A FAIR DEGREE OF CERTAINTY

	Number of Cases.	+	—	±
Leprosy	10	7(!)	2	1
Carcinoma	51	1	48	2
Sarcoma	3	0	3	0
Adenosarcoma	1	0	1	0
Endothelioma	1	1	0	0
Scarlatina	63	1	60	2
Varicella	1	0	1	0
Measles	2	0	2	0
Tuberculosis	52	0	52	0
Lupus	2	0	2	0
Raynaud's Disease	2	0	2	0
Banti's Disease	1	1	0	0
Hodgkin's Disease	2	0	2	0
Muscular Dystrophy	5	1	3	1
Neurasthenia	2	0	1	1
Dementia Præcox	5	0	5	0
Various Skin Diseases	58	0	57	1
Miscellaneous	74	0	74	0
	335	12	315	8

Table 5 presents a study of 615 cases by the regular Wassermann method; and the results obtained agree closely with those of other investigators.

TABLE 5.—RESULTS OBTAINED BY THE WASSERMANN METHOD

	Number of Cases.	+	%	—	±
Primary Syphilis	33	22=	66.6	8	3
Secondary Syphilis	120	104=	86.6	14	2
Tertiary Syphilis	91	66=	72.5	22	3
Early Latent Syphilis	81	39=	48.1	41	1
Late Latent Syphilis	74	33=	44.7	37	4
Hereditary Syphilis	4	4=	100	0	0
Cerebrospinal Syphilis	2	1=	50	1	0
Tabes	22	9=	40.9	13	0
Cerebral Endarteritis	2	2=	100	0	0
Suspected Syphilis	80	33=	41.2	39	8
Other Diseases	106	4*		102	0
	615	317		277	21

* 1 Carcinoma, 1 Epithelioma, 1 Malaria, 1 Leprosy.

In Table 6 I present the results of the simultaneous examination of 244 cases of known syphilitic conditions by my own and by the Wassermann system. In my opinattempt to move it forcibly to the left suffered from intense vertigo. He also exhibited, on looking to the left, a most marked lateral and vertical nystagmus. There was strong suspicion of a tumor either of the cerebellum or in the vicinity of the medulla oblongata, but the only fact that was not in concurrence with this view was the entire absence of optic neuritis; and yet we have all known of the occurrence of cerebellar tumors and of tumors in the vicinity of the foramen magnum, where this growth would have had to be, which are not attended by optic neuritis. The man's condition was becoming rather desperate; he could be fed only by the stomach-tube and seemed to be in great danger of respiratory paralysis, and as a last resort—although I did not think a specific condition probable—a blood test was made which gave a distinctly positive reaction. In view of its proximity to the cerebellum I did not venture to withdraw spinal fluid. As soon as the positive reaction was made out, sublimate injections were given to the patient, and within a week a most astonishing improvement occurred; the patient began to swallow food, the nystagmus was lessened, the vertigo diminished, and he seems now to be on a fair road to recovery; another case in which the Wassermann reaction has proved to be of incalculable value.

In the hemiplegias much assistance was given by the Wassermann test. We neurologists know how much at sea we often have been regarding the nature of an apoplectic attack, and if the onset was such as to give rise to the suspicion of thrombosis, unless the patient were well advanced in years, we have always had to fall back on the theory of a specific endarteritis. I feel that we can depend on the Wassermann reaction to corroborate such a suspicion or to diminish its probability. In the paper which I read before the Association of American Physicians. together with Dr. Collins, on "The Value of the Wassermann Reaction in Cardiac Disease" I reported the case of a hospital patient whose condition was most puzzling. He had a distinct endocarditis affecting both the aortic and the mitral valves. Shortly before entering the hospital he sustained an attack of hemiplegia which was very slow in its mode of onset, entirely without loss of consciousness, and in which the arm and leg were not simultaneously paralyzed. The onset of this did not at all correspond with the theory of embolism due to heart disease. A Wassermann reaction was positive in this patient, and I inferred from this that, although the patient had heart disease, he also had specific endarteritis, and that his attack of hemiplegia was due to thrombosis and not to embolism; another instance, it seems to me, in which the evidence furnished by the Wassermann reaction may be of great diagnostic value.

The Wassermann reaction has been of the greatest help to me in a number of cases of epilepsy in which syphilis was suspected as the only possible cause. Case 128 was one of hereditary lues with epilepsy in which the reaction was positive; and in one case (No. 89), a young man who had acquired syphilis a number of years ago and who gave a positive reaction, had also developed epileptic attacks, the meaning of which was supposed to be in doubt, but with the positive Wassermann reaction I think we need not hesitate to ascribe these spells to brain syphilis.

I have mentioned the cases in which positive reactions have been of great help, but a negative reaction has often been just as instructive, particularly in the case of tumor of the brain, in cases of headaches, and in conditions of disease of the peripheral arteries, more or less resembling Raynaud's disease and erythromelalgia, in which a negative reaction has led me to believe that the suspicion which I once entertained, that these conditions might be of specific origin, can not be defended.

In view of such experiences as I have recorded, I do not hesitate to speak enthusiastically of the value of the Wassermann reaction in neurologic diagnosis. I am certain that within recent years no aid to diagnosis has been given us which can at all equal it in value and in its importance. It should, however, be interpreted merely as a finding corroborating or disproving the suspicion of syphilis, and I would urge that every neurologist acquaint himself personally with the method so that he may learn to employ it and may help to determine by further investigations what the limitations to its usefulness may be, for limitations will surely be found.

I was soon convinced that the Wassermann test was valuable in determining our therapeutic procedures. As a result of my own experiences I would urge that a positive Wassermann reaction is an indication for antisyphilitic treatment; and as regards diseases of the central nervous system, I mean treatment by mercury and preferably by mercurial injections, I have placed reliance on the soluble salts, but I will not differ from those who have a predilection for the insoluble mercurial salts, or who still pin their faith to the iodids. It may be as well, however, to state my conviction that, while I have seen specific headaches and milder specific conditions improve under the administration of iodids, specific myelitis or any serious specific invasion of the cord or brain has, in my opinion, been benefited only by systematic mercurial treatment. These views, which I have held for some time, are, it seems to me, corroborated in the recent interesting statistics of Hoehne, who shows that calomel and sublimate injections appear to be the most efficient. This writer finds that the Wassermann reaction is changed from positive to negative more often after the administration of these two mercurial preparations than after other forms of treatment. If we remember in what haphazard and vague way antisyphilitic treatment has been given for years, both in nervous and in other diseases supposed to be of syphilitic origin, we must welcome a method which gives us some sort of rational basis for our therapeutic procedures. I maintain, therefore, that the Wassermann reaction has a positive value not only as an aid to diagnosis, but also as an aid to treatment.

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THE SERODIAGNOSIS OF SYPHILIS *

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It is my essential purpose to present the results of the analysis of 2,406 blood serums by the complement fixation test, using either Wassermann's or my own method of doing the test. Herewith are given six tables, giving in detail the results of the analysis and of a comparative study of 244 cases of known syphilitic or parasyphilitic conditions in which the Wassermann method and mine are contrasted. I shall also point out briefly the main differences between the Wassermann method and my own, referring to the various other modifica-

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

tions in passing. For further details consult my article read before the Section on Pathology and Physiology of this Association.

It is important to bear in mind that the main difference between my system and the Wassermann system lies in my use of a known quantity of amboceptor, while in the Wassermann system we meet a difficulty in the fact that human serum may contain anywhere from 0 to 20 units of natural hemolysin (amboceptor) capable of inducing hemolysin of sheep's corpuscles. This introduces an uncertain factor into the interpretation of the results, inasmuch as an excess of anti-sheep amboceptor leads to hemolysis even in the presence of syphilitic antibody. Any system using foreign corpuscles, such as that of Bauer, Hecht, Stern, and Detre, is equally apt to give fallacious results.

Minor differences often of great importance to the individual doing the test are: (1) in my system it is possible to preserve the various reagents, such as antigen, amboceptor, and, if necessary complement, in stable form, dried on filter-paper and then titrated, ready for use; (2) in my system the quantity of blood necessary for the test is very small, only a few drops; inactivation is not necessary and the blood need not be fresh; (3) the ease with which certain of the reagents can be procured is a factor; in my system human corpuscles are used, and the patient's own cells can be utilized. In all the other methods it is necessary to have a fresh supply of corpuscles, sheep's, horse's, etc., always on hand; (4) all the other methods require a complete laboratory, while any laboratory worker can do my test with a very small equipment.

Table 1 contains a summary of the results obtained by my method. The percentage of positive reactions in these cases of syphilis, manifest or latent, compares favorably with the results obtained by different investigators using the Wassermann system.

TABLE 1.—THE RESULTS OBTAINED BY NOGUCHI'S METHOD IN SYPHILIS, PARASYPHILIS, HEREDITARY SYPHILIS AND SUSPECTS

	Number of Cases.	+	%	—	±
Primary Syphilis	70	65=	92.8	4	1
Secondary Syphilis	197	190=	96	5	2
Tertiary Syphilis	177	159=	89.9	16	2
Early Latent Syphilis	115	87=	75.6	24	4
Late Latent Syphilis	150	119=	79.3	27	4
Under Prolonged Treatment	39	4=	10.2	32	3
Cerebral Syphilis	5	3=	60	1	1
Tabes	125	85=	68	27	13
General Paralysis	*15*	*13=*	*86.6*	2	*0*
Hereditary Syphilis	17	17=	100	0	0
Suspected Syphilis	172	60=	34.8	96	16
	1082	802		234	46

TABLE 2.—RESULTS OBTAINED BY NOGUCHI'S METHOD IN CASES IN WHICH SYPHILIS IS AN ETIOLOGIC FACTOR OR CAN NOT BE EXCLUDED AS A POSSIBLE CAUSE OF THE CONDITION

	Number of Cases.	+	—	±
Cirrhosis of Liver	7	5	1	1
Ascitic Fluids	21	11	9	0
Aortic Insufficiency	1	1	0	0
Chronic Arthritis	10	2	6	2
Eye Cases	29	14	15	0
Diabetes	5	1	4	0
Eczema	32	1†	31	0
Scleroderma	4	1‡	3	0
Brain Tumor?	8	4	4	0
Central Gliosis?	2	1	1	0
Hemiplegia	8	3	5	0
Spastic Paraplegia	3	2	0	1
	130	46	81	3

† This serum was sent to me by Dr. Howard Fox, who failed to obtain another specimen from the same case.

‡ This serum was sent to me by Dr. Schuyler Clark, who made a report on the same case elsewhere.

Table 2 is made up of cases in which syphilis could not be excluded as an etiologic factor. In many cases in which the diagnosis clinically was syphilis, a positive reaction was obtained, and *vice versa*. In the one case of eczema a second specimen was not obtainable; and in this case the patient could not be further interrogated to obtain, if possible, a history of lues. The possibility of hereditary syphilis in the one case of scleroderma could not be excluded; the mother gave a weak reaction to the test.

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In Table 4 I have reported a number of miscellaneous diseases in which syphilis was probably not a factor. Among these were certain cases of leprosy, malignant neoplasms, tuberculosis, scarlet fever and other exanthemata, in all which diseases positive reactions have been occasionally reported by those using the Wassermann method. It can not be denied that complement is fixed in a large percentage of cases of leprosy; the reasons for this result are as yet unknown. With carcinoma and scarlet fever a positive reaction is rarely obtained. The results here agree closely with those obtained by the Wassermann method.

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Adenosarcoma	1	0	1	0
Endothelioma	1	1	0	0
Scarlatina	63	1	60	2
Varicella	1	0	1	0
Measles	2	0	2	0
Tuberculosis	52	0	52	0
Lupus	2	0	2	0
Raynaud's Disease	2	0	2	0
Banti's Disease	1	1	0	0
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Table 5 presents a study of 615 cases by the regular Wassermann method; and the results obtained agree closely with those of other investigators.

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Other Diseases	106	4*		102	0
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* 1 Carcinoma, 1 Epithelioma, 1 Malaria, 1 Leprosy.

In Table 6 I present the results of the simultaneous examination of 244 cases of known syphilitic conditions by my own and by the Wassermann system. In my opinion, they prove conclusively the greater delicacy of my test over the other method in cases of syphilis. This greater percentage of positive reactions is not due to an undue sensitiveness of the method employed by me, but to the elimination in my system of the error introduced by using too great a quantity of amboceptor, as pointed out above.

TABLE 6.—Comparison of the Results

	No. of Cases.	Wassermann Method. + %	—	Noguchi's Method. + %	—
Primary Syphilis	23	17=73.9	6	20=86.9	3
Secondary Syphilis	79	69=87.3	10	76=96.2	3
Tertiary Syphilis	65	52=80	13	57=87.6	8
Early Latent Syphilis	27	13=48	14	18=66.6	9
Late Latent Syphilis......	32	24=75	8	27=84.3	5
Tabes	18	8=44	10	13=72.2	5
	244	183	61	211	33

In conjunction with Dr. J. W. Moore, of the Manhattan State Hospital for the Insane, Ward's Island, New York, I have examined the cerebrospinal fluids of 200 cases of parasyphilitic and other nervous conditions; the results will appear in the July number of the *Journal of Experimental Medicine.*

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THE WASSERMANN REACTION *

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The difference between a normal and a specific serum in the Wassermann reaction is only quantitative, the reaction being provoked by the presence in the blood serum and cerebrospinal fluid of colloidal elements of histogenic and not bacteriogenic origin.

The researches made on the syphilitic serums have proved that the substances to which the syphilitic serums owe their specific property are equally soluble in diluted alcohol. In fact, the alcoholic extracts of the serums contain salts and lipoid substances which either alone or in presence of the extract of liver prevent hemolysis and give a positive reaction. That would prove that the Wassermann reaction is due to the action of lipoid and salts contained in the liver extract on the lipoid and salts contained in the syphilitic serums.

I suppose that if it were possible to make the Wassermann reaction so sensitive that we could thereby detect any trace of colloidal substance contained in the serums to be examined we would have positive reactions in many cases besides the specific ones. When the blood crasis has undergone temporary or permanent modifications, the main necessity, from the clinical standpoint, in the performance of the reaction is to be able to detect the point, above which every positive reaction can be considered specific. To perform, interpret and understand the Wassermann reaction, we must not forget the laws regulating the fixation of complement. The most important is this: If a serum is used containing albuminoid substances in excess, we can have a mechanical fixation of complement. So in the practice of the Wassermann reaction we must remain within the limit of doses in which we are sure no false complement fixation will occur, and in the meantime remain within the dose limit of the hemolytic action, because if we add to the mixture antigen-antibody too strong a dose of complement the complement will not be entirely fixed and the hemolysis of the red sheep corpuscles will take place also if the mixture antigen-antibody has fixed the proper quantity of complement.

Professor Wassermann, in establishing the routine to follow in his method, has been guided entirely by the above-mentioned principle, and his method is of mathematical precision. As I have said, we are in the presence of a quantitative reaction; so admitting and acknowledging the precision of his method, we must come to the conclusion that the only possible fault to be found in his method would be in establishing the basic point of departure for every positive reaction at a level higher than it ought to be, or better not to have made the reaction sensitive enough.

From the clinical standpoint such a feature has no real practical value. The clinician must not forget that no pathologic process ever remains at a standstill. If a specific infection is affecting the blood, and if the Wassermann reaction is efficient enough to detect such a condition, it will detect it some time during its course.

It really does no harm if the condition is detected at the very beginning or shortly after. The Wassermann reaction and quantity of syphilitic antibodies in the serum run along two lines, a coordinate and an abscissa. These two lines must inevitably meet. The crossing point of the abscissa on the coordinate may not coincide exactly with the biologic changes taking place in the blood on account of the infection, but it will certainly occur at a determined moment, during the phase of the infection. When the route and the method followed by the investigator are always the same, the appearance of a positive reaction will represent the saturation of the organism with the same quantity, x, of syphilitic antibodies or colloidal substances, and from that point on every serum examined will always give a positive reaction. From the clinical as well as from the therapeutic standpoint, the reaction meets the exigencies of the clinic almost to perfection. Why should we then modify the method?

Dr. Noguchi, one of the most active Wassermann critics, is entitled to our praise for having spread the knowledge of the Wassermann reaction among many physicians in New York, but I fear he forgot during his pedagogic undertakings that he was training general practitioners and not scientists.

The majority of these physicians learned and applied the Wassermann method after a few days' experience in his laboratory, the majority of them lacking absolutely the elementary scientific foundations necessary to undertaking a work of the importance and delicacy of the Wassermann test; the strict rules established by Wassermann about the dosing, temperature and preparatory operations preceding the test being absolutely neglected. Noguchi's intention of reducing the Wassermann test to the simplicity of a urine analysis for the detection of albumin is very commendable; but can it be realized?

What a difference between his views and those manifested by Fournet before the Paris Board of Health asking that on account of the extreme difficulty and delicacy of the Wassermann test and its invaluable utility to humanity at large, the government should establish laboratories supervised and conducted by competent biologists to do nothing else but the Wassermann test, and to open them free for the practitioners.

The new Noguchi method, the so-called antihuman method, is theoretically rational, though clinically it has sometimes aroused doubt about its efficiency as a substitute for the original Wassermann test. While it is simpler than the original Wassermann, it needs the same amount of care and knowledge in those using it in order to be efficient; so the same criterion and criticism of the original Wassermann prevail for the antihuman method. The Wassermann reaction as it is now has proved to respond perfectly to the demand of the clinic. Noguchi has not proved his to be better; so let us keep what wears better and has the prestige of tradition besides.

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CEREBROSPINAL FLUID

The real contradictory results have been obtained in the examination and interpretation of the cerebrospinal fluid findings.

I am glad of it, and I think that the time has come for the real understanding of the reaction of the cerebrospinal fluid.

We must understand that there is not always parallelism between blood condition and condition of the spinal fluid in regard to syphilis. In the same way there is no parallelism between the Wassermann reaction and lymphocytosis of the cerebrospinal fluid. Sometimes we have been led astray by considering these two conditions parallel. The reaction of one fluid may be equivalent to the reaction of the other, but not necessarily.

A positive cytodiagnosis of the cerebrospinal fluid and a positive Wassermann reaction of the blood serum can coexist in the same patient as equivalent formulas of the same condition, or can be absolutely independent. Lymphocytosis of the cerebrospinal fluid represents a reaction of defense of the meninges against an invading toxic product. Lymphocytosis is a specific element in meningeal tuberculosis, as it is in meningo-encephalitis, and as it is in tabes and advanced paralysis. But an especially interesting fact from the clinical standpoint is that all skin eruptions have a tendency to produce meningeal reaction, and as a consequence lymphocytosis.

Professor Hutinel gives statistics of seventy-two cases examined, affected by different dermatites, in which the cerebrospinal fluid presented more or less intense lymphocytosis.

I do not doubt that the cerebrospinal fluid in some of these cases, on account of the amount of albuminoid substances contained in it, would have produced a complement fixation. It would have been a mechanical fixation of the complement, masking a real positive Wassermann reaction. This fact is the explanation of the discussion aroused among investigators of the Wassermann test when they have obtained a positive reaction of the spinal fluid in some cases of scarlet fever.

We can find the explanation of this fact, apparently paradoxical, in studying the embryogenesis of tissues and organs.

The meningeal sac and the skin originate from the same layer, "the ectoderm," and it is plausible that these two anatomic elements, physiologically as well as pathologically, are so connected that their clinical manifestations also bear relations of cause and effect. These facts are not uncommon in the clinical observation of clinical phenomena. The so-called polyorrhomenitis, observed first by Semmola, a pathologic condition in which the inflammation of one of the serous membranes of the body is followed by an actual polyserositis, is one of the pathologic symptoms that tend to demonstrate the intimate relation existing between all the endothelial tissues of the body. This is also a phenomenon of embryogenetic origin. Arteriosclerosis can be considered as diffuse fibromatosis invading all the circulatory system.

Admitting this relation between skin and meninges, we can with a very good reason be induced to discard the absolute reliability of the Wassermann test in the spinal fluid as compared to the reaction of the blood serum. I do not mean by that to exclude entirely the spinal fluid from the benefit of the Wassermann test, but I mean that we must restrict the field of value of a positive reaction and probably increase the value of a negative reaction of the cerebrospinal fluid.

GENERAL PARALYSIS

A special value has been attached to the Wassermann test of the spinal fluid as a means of early diagnosis of general paralysis. This conception does not respond to the reality; in fact, I may say that it is in antithesis with it. The number of cases of general paralysis in which the Wassermann reaction gives positive results varies with the different investigators from an average of 50 to 60 per cent. Levaditi says that only 58 per cent. of the cases of general paralysis give a positive Wassermann reaction, but they all establish the fact that the reaction is almost always constant in advanced cases.

So the Wassermann test has much less value than the usual cytodiagnosis of the cerebrospinal fluid for the detection of the early stages of general paralysis, while it is of great usefulness for the prognosis and therapeutics of general paralysis, viz., when in suspected cases of general paralysis the Wassermann reaction of the spinal fluid is negative, the prognosis is more favorable because the specific treatment may help the condition of the patient, either retarding the progress of the disease or bringing on the so-called clinical recovery, viz., a recovery of a few years' duration.

The literature of general paralysis is rich in cases of clinical recovery. Leroy mentions a case of general paralysis in which the process subsided for a period of twelve years.

But when the Wassermann reaction of the spinal fluid in cases of general paralysis is positive we must realize not only that the case is helpless, but that the antisyphilitic treatment is many times dangerous, and will always help a quicker breaking down of the nervous system. So the clinical conclusions to which this information leads are as follows:

1. Positive cytodiagnosis and negative Wassermann reaction of the cerebrospinal fluid constitute a positive sign for the diagnosis of early stages of general paralysis and tabes paralysis, providing that the clinical syndrome accompanying the reaction does not exclude entirely the suspicion of the two above-mentioned pathologic conditions in the organism. Specific treatment is advisable; prognosis hopeful.

2. Positive cytodiagnosis and positive Wassermann reaction of the cerebrospinal fluid constitute a positive sign of the advanced stages of general paralysis, or tabes paralysis, provided that the clinical syndrome confirms our diagnosis. Specific treatment is harmful and sometimes dangerous; prognosis is bad.

Positive cytodiagnosis and positive Wassermann reaction also, if not accompanied by a definite nervous syndrome, constitute an evident sign of the disintegration of the nervous centers.

The reason for these conclusions lies in the fact that we must conceive the genesis of the process producing a Wassermann reaction in the spinal fluid as different in nature from the genesis of the process producing the same in the blood.

One is the process of disintegration of the nervous system; the other shows a process of reaction of the blood. One is a late passive symptom, the other is an early active symptom. The positive reaction in one process is the result of a mechanical fixation of the complement and the other is a normal reaction.

All these statements need explanation, and I am going to give them according to my understanding.

In the early stages of general paralysis the meninges and the nervous centers have not yet entered the phase of reaction, or, better, of defense against the infection, so no presence of antibodies is detectable in the cerebrospinal fluid, while there is predominance of antibodies in the blood serum. In this period the Wassermann reaction will be positive for the blood serum and negative for the cerebrospinal fluid, and the specific treatment will be beneficial, because the encephalus is still in sufficient condition of resistance to stand medication.

In the cases of advanced general paralysis the blood does not produce any more antibodies, while the nervous centers begin to manifest their disintegration, showing the presence in the cerebrospinal fluid of lipoids derived from their albuminoid components. We have in this phase a real autodigestion of the elements of the brain and spinal cord.

During this final phase the specific treatment becomes dangerous because of the impaired resistance of the nervous system to stand medication, and the production of lipoids and albuminoids in the cerebrospinal fluid will be rapid and so much in excess that its examination by the Wassermann test will give positive reaction, because of a mechanical fixation of the complement. This very fact is, in my estimation, of great value, shows that general paralysis is not exactly due to lis or its toxins, but to the immunizing substances duced in our organism which becomes a victim of autointoxication.

This fact would also explain why the spinal fluid of nervous patients with no syphilitic history could give a positive reaction; these are cases of progressive disintegration of the nervous centers, disintegration equal in result to the one produced by syphilis.

This wider interpretation of the reaction increases its value to a very high degree, because it does not state that a syphilitic infection has taken place, but it constitutes an index of the resistance of the nervous system, with the difference that in cases of absence of syphilis the positive reaction will show the passive condition of the nervous tissues, which, exhausted by the reaction against an invading toxin, rapidly proceed to their complete disintegration.

So the clinical interpretation of the Wassermann test will show either active lues when detectable in the blood serum and passive progressive disintegration or the so-called *déchéance* of the nervous system when detected in the cerebrospinal fluid.

This conception of the reaction will change our clinical as well as our therapeutic views, as it will also make us understand why other conditions of the nervous system, like dementia præcox, senile dementia, idiocy, imbecility, etc., could give a positive reaction. That would confirm the idea already expressed by me in the paper read at the opening of the Neurological Society in New York, when I said that probably we would be compelled to give the Wassermann reaction a wider interpretation and consider it in many cases as a grave disturbance of the metabolism of the nervous system, while syphilis would be considered as one of the most important etiologic factors in causing such a condition.

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We are to-day in the condition of the owner of a claim in a gold region before the soil has been exploited and the mine put in working condition.

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Does mercury act as a specific agent or does it act as a general antiseptic? If the action of mercury on the system should be purely antiseptic, are we not entitled to consider the action on the system of other antiseptics probably less deleterious than mercury? And if its action is an alterative one, are we not entitled to the same privilege?

It is undoubtedly true that a substance capable of producing in people working in mercury mines the classic syndrome of hydrargyrism—principally tremors, paralysis, hysteria, cachexia, etc.—can not help but constitute also a deleterious factor for the organism if given in small repeated doses.

The organic condition produced by a slow but prolonged action on the system of any toxic element is the establishment of pathologic lesions in the organism, functional at first, then anatomic. And we must remember that any pathologic symptom, when allowed to remain, even if purely functional, takes root in the system, and produces anatomic changes in the organs deputed to the manifestations of the symptom. Such an axiom prevails, especially in the pathology of the nervous system, and the consequences are much more serious because the effect spreads over a large surface and involves the organism as a whole. Allow a stimulation of the motor or sensory area to remain long enough, and one will notice that permanent degenerative changes of the morphologic elements situated in the affected area will take place. This continuous overlooking of the fact that a condition of intoxication of the system, when acting for a certain length of time, creates permanent pathologic conditions of the nervous system is one of our main clinical and physiologic misconceptions. Such a statement is proved, for example, by the so-called postoperative neurosis, affecting people that have undergone surgical operations. Many patients have been physical and nervous wrecks after going through operations and very successful ones; this condition is due principally to the absorption of the anesthetic, because of the fact that every chemical element entering the circulatory system acts on the nervous system first, and as a reflex on the entire organism after.

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He had injected into rabbits at different intervals solutions of bichlorid of mercury in varying strength during the period of four months. The spinal cord of these rabbits examined after the period of four months had elapsed showed sclerotic alterations of the posterior column and different in intensity in the different rabbits, but anatomically identical with those of tabes in man.

If this fact does not prove that tabes is caused by the action of a metallic poison, it certainly implies that once the anatomic lesions of tabes are established the advisability of treating a patient with mercury must be taken *cum grano salis,* and the question of using a therapeutic minimal must be the main consideration, if we have to use mercury, because its action in cumulative doses is apt to create anatomic lesions of the spinal cord and act on it as the syphilitic virus does. This also proves that the etiology of tabes is a neurotoxic one, and that other elements besides syphilis might perhaps show a predilection for the spinal cord, and produce a tabetic syndrome.

The question of therapeutics in general has always been neglected and many of us have assumed a rather cynical attitude toward any therapeutic method adopted, attempted or even suggested. I feel altogether differently on the subject, and my earnest belief is that through therapeutics only will medicine achieve the highest degree of evolution. I think that a misunderstanding, or rather a misconception, is at the bottom of our therapeutic failures. My viewpoint in the genesis of diseases is that blood is the bearer and transmitter of any infectious element, and that the localization of the infectious element in a special region or organ of the body is a simple process of metastasis. The microbes and toxins are transported by the blood current to such regions of the body as offer conditions most suitable for the accomplishment of their reactive processes, just as in a similar manner cancer cells are transported to those parts of the body wherein the malignant growths may be reproduced.

Such being the case, its logical consequence is that, if the therapeutic agent should follow the same route as that followed by the infective element, its action, general and local, would take effect as such points presented as are necessary for its action. The therapeutic agent must then be introduced directly into the blood in order to be carried to the place where the source of infection is—the blood must become the clinical recipient of therapeutic elements.

The main problem to solve, then, will be the one concerning the selection of the therapeutic agent in each pathologic condition and its dose. My attempts in this direction have been as many as were permitted by the clinical material occasionally at my disposal; and in order to remain on the subject I shall mention two of the attempts made by me in the treatment of syphilis. In both I was guided by the different clinical views that we could be allowed to assume in regard to the genesis of the infection without failing in logic and altering our conception of its pathogenesis.

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To a second attempt I was guided by considerations of altogether different nature. My earnest conviction, dating many years back, and proved by my paper on the treatment of appendicitis presented at the twelfth annual meeting of the Association of Military Surgeons of the United States in Boston, is that the therapeutic equation to be resolved in medicine is the same as that resolved by surgery, with the difference that for the term "local antisepsis" we must substitute the term "general antisepsis," or, in other words, disease is a closed wound in which the colonization of microbes and the action of toxins accomplish their destructive work far beyond our control. The main difficulty in adopting internal antisepsis is to use a therapeutic agent which is a powerful general antiseptic without being detrimental to the system. I have selected for the purpose, not only in syphilis but in many other infective conditions, a preparation of electric silver, in the colloidal state. The colloidal state of a metal represents a state of extreme division of the metal, an ultramicroscopic suspension of metallic parts in a menstruum. This extreme division corresponds to an immense surface of contact of the metallic substance, and, the substance being antiseptic, to an immense antiseptic area. It has been calculated that the total surface of 1 c.c. of electric gold in the colloid state corresponds to the surface of 600 square meters. This explains the immense antiseptic value of the electric metals in the colloidal state. The action of the electric silver in two cases of tertiary syphilis treated seems to benefit, though in a less degree than does hydrargyrum, the course of the manifestation.

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CONCLUSIONS

Wassermann has initiated us in the conviction that the study of the chemical and biologic conditions of the blood can be used as methods of clinical diagnosis, and has opened a new era to medicine. It is by working on the development of this new idea that medicine will achieve the results never obtained before, and it is with this fact in view that the minds of the young generation of medical students must be occupied. The evolution of medicine has been relatively slow, because of the irrational methods adopted in clinical studies. A normal condition of the blood implies a normal equilibrium, while an abnormal condition implies a lack of equilibrium of all our systemic functions.

It is rational to think that each pathologic condition must reflect itself in the condition of the blood. It is a pathologic axiom that rationalism confirms, although science has not completely proved it, and to the student of nervous diseases this knowledge must be of more value than to any one else, because it is the nervous system that is the first affected by a condition of dyscrasia.

The nervous system and the circulatory system preside over the harmonization of all individual lives. One harmonizes the functions of the various organs, the other harmonizes their processes of nutrition. These two systems are in direct relation, physiologically and pathologically, and so much so that we can say that the etiology of nervous diseases must principally be found in the pathology of blood, and that the diseases of the circulatory system can find their principal etiologic factors in the conditions of the nervous system.

The Berlin Faculty of Medicine was the first to establish a chair for the teaching of serodiagnosis. It is only a beginning, but, remaining as it is, it will not be the bearer of the many useful results of which it could be capable.

In my opinion, the study of serodiagnosis in particular and of hematology in general must leave the fields of pure biology and enter entirely the field of the clinic.

The utility of the laboratory scientist ceases the moment at which the work of the clinician begins. The scientist will become a real prominent and substantial factor in the progress of medicine when his work goes *pari passu* with the work of the clinician. The medical scientist is always a poor observer of clinical facts, and his clinical deductions are general paradoxes from the practical clinical standpoint; so we can not allow him to draw conclusions of clinical value. We must take his knowledge, his experience and apply it at the bedside. Hundreds of times we shall be compelled to modify and rectify not only his views, but his very method of research in order to harmonize them with our clinical needs, and principally with the views of logical therapeutics.

If every pathologic condition of the organism is the expression of chemical, morphologic or bacteriologic blood formulas and if the principal genesis of disease is found in the changing of the blood conditions, our therapeutic methods also must change entirely, and the therapeutic equation to be solved for each pathologic condition will be to find the therapeutic agent which, introduced directly into the blood, will neutralize that heterogeneous toxic element in circulation which causes the disease.

Hypodermoclysis, venoclysis, seroclysis, etc., will entirely supersede every other therapeutic means.

What is the value of any scientific clinical investigation if in the field of therapeutics we are almost on the same level with Galenus? Do we expect the Rockefeller and Pasteur institutes or any other institution for biologic research to investigate for us the most appropriate method of therapeutics? Every one of our teaching institutions of our hospitals must undertake the colossal task imposed on us by modern exigencies.

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Why should we not in all of our institutions with more vital reason do a much more useful and humane thing by having a ward well conducted and equipped with sick patients reserved for therapeutic research?

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Now, as to why we do not find a positive reaction in all cases of tabes, or, at least, in the vast majority, like we do in paresis, we may theorize from various standpoints. It is conceivable, for instance, that in a condition so chronic as tabes, caused undoubtedly by syphilis in at least the vast majority of cases, and I believe in all, the primary specific infection may have periods of quiescence, when the reaction for syphilis will not be positive. Moreover, such patients are so frequently subjected to specific treatment which has such a powerful influence on the Wassermann reaction, that it is evident we may expect to find frequently negative reactions in tabes. Likewise, with reference to the results with spinal fluid, which have been unusually low in Dr. Nonne's experiments, in comparison to the results with serum, I think that we would also indulge in fantastical excursions into the theoretical side of the question if we attempt to explain it. Dr. Castelli has shown us what ideas one may formulate on the subject. The fact remains, however, that the most practical side of the question is to examine the blood serum, and in a majority of the cases of paresis, and in a large percentage of the cases of tabes, we get a positive reaction with the Wassermann test, thus clinching the etiologic relation to syphilis. I have not had the opportunity to investigate Nonne's butyric acid reaction, but have Noguchi's ammonium sulphate, and I find it, in inflammatory conditions of the meninges, positive; for instance, in the epidemic form of cerebrospinal meningitis; while it is theoretically interesting and possibly might be regarded as an addition to our resources in a diagnostic way, it can not be regarded of specific value.

Dr. Frank E. Fox, Fulton, N. Y.: I agree that Dr. Noguchi's test is not suitable for the general practitioner, but I do not think that Dr. Noguchi really intends this test to be used by the general practitioner, but intends it to be used by men in clinical laboratories and not by men who do two or three tests only, but by men who do a considerable number of tests. I recently read a paper on the comparison of the Wassermann and Noguchi tests in 200 cases, mostly of syphilis in various stages, and the practical results that I have obtained show a larger proportion of positive results from the Noguchi test than from the Wassermann, although at the same time I should say that the two tests run roughly parallel. Of the eight different methods that have been suggested for serodiagnosis of syphilis depending on the principle of complement fixation, all except the method of Noguchi have more or less serious objections.

With regard to one or two difficulties experienced in the practical working of the Wassermann test, I certainly think that the chief difficulty to be encountered is in the preparation of a suitable antigen. If we could have a uniform and standard antigen a great advance would be made. Dr. Sachs has suggested that certain mixtures called A and B, respectively, be used; and it is claimed that the results with the use of these mixtures are practically the same as obtained when the alcoholic extract of syphilitic fetus is used; although they admit that a less number of positive reactions is obtained by these mixtures. Facini states that with mixture B he obtained practically no good results at all and that with mixture A he obtained 66 per cent. + as against 84 per cent. + by using the alcoholic extract of syphilitic fetus.

The one important thing in making a test from a diagnostic standpoint is to repeat the test possibly for two or three weeks in succession, and it is absolutely important to use two or three different kinds of antigen. I think the experience of most observers is that with some extracts positive results are obtained and with others negative; and this should teach us that in an important case for diagnosis two or three different extracts should be used in addition to repeating the dose.

Dr. Alexander S. Wolf, St. Louis: I am a dermatologist and come as a visitor to this symposium. I am especially interested in the importance of the Wassermann reaction for syphilis in cases of obscure nervous diseases. I think something should be said from the standpoint of the dermatologist, when the question of importance and reliability of Wassermann reaction is being discussed. I had an opportunity to review the recent literature on this subject from the point of view of a dermatologist in a paper which I read in St. Louis some time ago. I am satisfied that many things which are not clearly understood in the statistics of nervous diseases may be better understood if we consider the parallel statistics of the Wassermann reaction in cases of syphilis.

The first reports on the Wassermann reaction brought very interesting divergencies in the findings. While Neisser found the reaction positive in 70 per cent. of recent, clinically well-established cases of syphilis, Wassermann found it positive in 90 per cent. If two founders of a method, working on the same principle, come to such enormous difference—I do not mention the varying statistics of other and later investigators—while using entirely fresh syphilitic material, is it any wonder that one finds such divergence in the results of the sero reaction in cases of nervous diseases, where a supposedly acquired luetic infection occurred years and years ago, if at all, and the ways and means of establishing an eventual syphilitic origin of the disease, either clinically or by any other method, is very difficult?

In Professor Reilly's recent publication from the Leipsic clinic for internal diseases, it is stated that in the course of investigations in connection with syphilis, the seroreaction, eight cases of tuberculosis were examined as to the complement *binding of their serum, which is the principle of Wassermann* reaction. The results even in these few cases were striking: 3 gave a strong positive Wassermann, *i. e.*, hemolysis did not take place at all; 3 others gave a reaction of medium degree and the remaining 2 a weak reaction. In other words, over 35 per cent. of cases yielded a strong positive reaction. Salomon, chief of von Noorden's clinic for internal diseases in Vienna, reported at the Congress for Internal Medicine, held in Vienna in May, 1908, that he found a positive Wassermann reaction in 5 out of 23 cases of tuberculosis, which is a considerable percentage. If you consider for a moment the prevalence of consumption in the large cities in this country, as well as in Europe, especially in those strata of population which provide the clinics for venereal diseases with their material for investigation, you can imagine how the statistics of positive Wassermann reaction might be influenced, if in every case of syphilis it would be stated whether tuberculosis were present or absent. Therefore, so long as the statistics of the Wassermann reaction lack one important feature, viz., the statements regarding the general condition of the patients as to exclusion of any other disease which has already been found or may be found in the future as giving the reaction in a rather large number of cases, they must be considered with less enthusiasm than the ardent followers of Wassermann would like to see. The seroreaction has already lost the scientific foundation which Wassermann originally claimed for it and is an empirical method that promises to become a valuable aid to clinical diagnosis. But its specificity for syphilis is more than doubtful. A voice of warning must therefore be sounded, because boundless enthusiasm is apt to discredit a method which at present is only in its inception and which through a judicious criticism will gain more than through a criticless admiration.

Dr. Maximilian Herzog, Chicago: I have had some experience with the Wassermann test, having tried it in about 100 cases of which I have more or less complete clinical histories. I want to go on record with the statement that Noguchi's modification, commendable as it is from a purely scientific standpoint, is a very dangerous thing because it tends to place in the hands of the general practitioner a test which is exceedingly difficult, a test which involves some very delicate principles and which can never be made a simple test, as has been pointed out. I have had some experience with one modification, that of Bauer, and while I can not go into the details here of the defects I found in that modification in comparison with the original Wassermann test, I can state that from what I have seen, none of those modifications ought to be used, and we ought to stick to the original Wassermann test, which has already been tried in many thousands of cases. We have from four European clinics alone the reports of 10,000 cases.

Now, so far as my material is concerned, from the standpoint which interests you, it has been rather scanty. Most of my cases were of the ordinary cutaneous type and they came from the hands of the dermatologist; but I have examined 8 cases of tabes of which 6 were positive and 2 negative; the 2 cases which were negative were patients who had been treated with mercury and the iodids. I had 3 cases of early paresis. All of those reactions were positive. The other cases examined were of doubtful types and they were all negative, but all of those were proved finally not to be cases of syphilis. So, on the whole, I can confirm on a very small number of cases of tabes and paresis those larger statistics on these parasyphilitic affections given here to-day.

In conclusion I want to urge you to stick for a while at least to the original Wassermann test. Let it be made by men competent to make it and let us not take any statistics from men who say that they find that 25 per cent. of their cases of tuberculosis give a positive reaction. A positive reaction by the Wassermann test means syphilis and nothing else, except, of course, an occasional case of scarlatina, leprosy, etc. A man who gets 25 per cent. positive reactions in tuberculosis doesn't know how to make the test.

DR. B. SACHS, New York: I have very little to add except that the remark which the last speaker made, I think, has a great deal of truth in it; that if any one were to claim that he had found 25 per cent. of tuberculosis cases giving a positive reaction under the Wassermann test, personally I should be very much inclined to doubt the accuracy of his test. The only safe position for all of us to assume is that this entire question is in its earliest stage; and the one reason why I was very glad to help bring this subject before the meeting to-day was to encourage as many men as possible to take up the line of investigation; and I think we shall only arrive at the truth of the matter after we shall have had statistics upon thousands and thousands of cases. It will be much the same, I think, as it was at the time of the agitation in favor of the adoption of the Widal method in the diagnosis of typhoid. Everyone now knows about how much importance to attach to a positive or negative reaction in typhoid.

In order that my own view may not be misunderstood, I would like to say that I agree with those who favor retaining the Wassermann method, and I hope that everyone who works in this field will take the trouble to acquire the original method. But I also want to say, as one who has personally worked in this field and who has tried to do conscientious work in it, that I hail with delight Dr. Noguchi's attempt at a modification of the method, and chiefly for the reason that everyone who works with the Wassermann method knows how difficult it is at various times to obtain satisfactory material for reagents. I think the suggestion made is perfectly correct. The method should be designated as the Wassermann test in deference to Wassermann, who did the great original work in this field, while the method described by Dr. Noguchi should be called the "Noguchi Modification of the Wassermann test." Dr. Noguchi's idea of trying to dry these various reagents, preserve and have them handy for use at all times is one that I can only admire. I would suggest that everyone who works with the Noguchi modification should for the next year or two use it and control it by a parallel series of tests according to the original Wassermann reaction. In that way, and by making comparison between the two methods, we will in time learn whether the Noguchi method can be accepted as a full substitute for the Wassermann reaction. In a parallel series of my own of a large number of cases, the agreement between Noguchi's modification and the original Wassermann test was very remarkable indeed. The differences were confined to three or four instances and such differences can readily be explained. They were so slight that I want to go on record as much impressed by Noguchi's modifications. But I plead in favor of running the two tests side by side for a considerable period.

DR. H. NOGUCHI: I regret very much that Dr. Castelli appears so far to misunderstand my attitude toward the original Wasserman method as to speak of me as a bitter critic. My attitude is simply this: I recognized certain defects inherent in the Wassermann method, and what I have done is to improve that method by eliminating these defects. My criticism is a criticism of the principles involved in the technic and not of the persons employing it; and hence there is no bitterness in my criticism. Dr. Castelli has also referred to the work of those whom he refers to as my pupils. In the usual sense of the word, I can not be said to have had pupils. Dr. Castelli himself, however, did some tests in my laboratory before I completed my new method. The Wassermann reactions reported by him have been done, I believe, largely with the titrated amboceptor and antigen which I furnished. A number of other physicians, who have worked with me over a period of several months, have learned not merely the procedure employed in doing the Wassermann and my own method of the fixation test, but also the principles of hemolysis, and the method of preparing the antigen, amboceptor, and complement, but are, I feel justified in considering, capable of carrying out the serodiagnosis of syphilis in a reliable manner.

In my opinion forty cases are hardly enough to base any final conclusion on. Besides, the slight discrepancy between the results obtained by Dr. Castelli and those by me may also be ascribed to the individual differences. I doubt whether Dr. Sachs would have obtained a better agreement of the results if he had sent these specimens to two different persons employing the same method. That my system is more sensitive than the Wassermann is, however, clear from my own comparative study on 244 cases, but there is no undue sensitiveness in the system.

I had perfected my system before Tschernogubow's article appeared, and I may point out that Tschernogubow's method is fundamentally incorrect in its principles. Not one case has been reported by him and he has now another method in which he proposes to use guinea-pigs' washed corpuscles.

Concerning Dr. Herzog's warning of the danger of abuse of the reaction on account of simplification, there can be no more danger in this than in the difficult Wassermann test, so long as both are to be carried out by trained workers only. The simplification removes the difficulties for these qualified workers, and offers a better opportunity to untrained men to become qualified within a shorter period. There is no guarantee that the difficulties in the Wassermann method will necessarily bar unqualified workers.

Clinical Notes

TWO CASES OF TUBERCULOUS INFECTION OF THE PERITONEUM

W. H. ALLPORT, M.D.
CHICAGO

These cases illustrate unusual phases of intraperitoneal tuberculosis, and serve also to draw attention to certain points in the natural history of this disease which do not appear to have received sufficient notice at the hands of systematic writers.

HYPERTROPHIC APPENDICITIS OF TUBERCULOUS ORIGIN

CASE 1.—*History.*—S. R., boy aged 10, had had numerous previous attacks of appendicular colic, and a history of "not feeling well" for one month, with the present acute attack of three days' duration.

Examination.—Patient was rather pale and emaciated; pain, vomiting, constipation, tense rectus, indistinct tumor at McBurney's point. Afternoon temperature, 102 F.; leucocytosis, 20,000.

raw rectal wall was at once carefully examined, but no bowel opening could be detected, and after closing the opening in the cyst with forceps, the enucleation was completed. There was no hemorrhage from any single large vessel, although the oozing from torn surfaces was profuse. The tumor had been contained in a sort of globular cavity made up of pelvic wall, sigmoid and rectum, bladder and uterus, and there was not the least suggestion of pedicle. The adjacent bowels were then cleaned and examined for perforations, but, although the surfaces were unhealthy and denuded, they presented no macroscopic tubercular nodules and no perforation could be discovered. Three cigarette drains were introduced, two to the depths of the cavity and one to the most suspicious bowel surface, and the abdomen was closed after excising the hernial sac and renewing the normal relations of all the parietal structures to the median line. The operation was followed by great vascular shock and considerable vomiting and distention, but in five days improvement was coincident with the appearance of a fecal fistula, through which escaped, at first, all of the evacuations and large quantities of flatus. Presently, however, the rectum resumed its function, the temperature became continuously normal, the appetite and strength improved, the fecal discharge ceased, and at the present writing conditions point toward a speedy permanent wound healing under occasional treatment of the fistulous tract with Beck's paste. Weight, 124, and increasing.

Examination of Specimen.—Smaller cysts (2 or 3) not preserved, but filled with clear contents; walls unthickened. Contents of large cyst not preserved, but of fecal odor, gray-brown color, not bloody, and about the consistency of buttermilk. Size, prior to rupture, that of an ordinary cocoanut; after removal, that of a baseball. Outline, irregularly globular; no pedicle; surface rough and fibrous, with no peritoneal surface in evidence. Thickened areas in the wall were later recognized microscopically as tube and ovary. Sac wall, irregularly thickened, fibrous and varying from .5 to 5 cms. (1/5 to 2 in.) in thickness; some soft spots containing blood and pus; a fistulous tract 4 cm. (1½ in.) long, lined with grayish-green membrane and terminating abruptly on inner and outer faces of sac. The interior of the cyst is rough, irregular and gangrenous, and the wall in places peels rather readily into layers.

COMMENT

The original pathologic diagnosis made by the laboratory in this case was pyosalpinx and pelvic abscess. Later Dr. E. R. LeCount, without knowledge of the clinical history, became suspicious of the specimen and took up the microscopic examination himself. After repeated section cutting, he was able to demonstrate:

(a) Many microscopically typical foci of tuberculosis were present with no gross tuberculous degeneration.

(b) The cyst was neither covered nor lined with epithelium or endothelium, and that its wall was made up of layers of organized fibrin and inflammatory cells.

(c) The tube and ovary were incidentally included in the cyst wall, but that they did not form any integral part of the cyst.

(d) The tube and ovary were not themselves tuberculous.

The findings at the first operation were those of the ordinary form of tuberculous peritonitis, probably secondary to intestinal tuberculosis. At the second operation the gross tuberculosis had disappeared, leaving the usual scar-tissue adhesions. At the third operation the pathologic finding was an extremely rare one: a pseudocyst composed of tuberculous inflammatory tissue, probably originating from an encapsulated perforating ulcer of the sigmoid, and fed from time to time with septic material from the bowel.

Such pseudocysts are mere sacculated receptacles for morbid products, and are to be differentiated from true cysts of the genital tract by their lack of true lining and covering membranes, by the thickness and inelasticity of their walls, and by the wall itself being composed entirely of inflammatory material. Their origin is usually tuberculous. Clinically, these deposits are commonly taken for ordinary pelvic cysts, or for tubo-ovarian abscesses, and there is no possible way to identify them prior to operation, except through inferences drawn from the history.[2]

85 Rush Street.

CRURAL AND AXILLARY RINGWORM IN THE CANAL ZONE

ALFRED G. FARMER, M.D.
Physician, Gatun Dispensary, Isthmian Canal Commission
GATUN, CANAL ZONE

Mention in The Journal of June 26, 1909, of the prevalence of tinea cruris in the temperate zone would seem to make some description of this annoying disease, as seen so commonly in the tropics, of interest. Tinea cruris et axillaris is seen with great frequency among the laborers and lower class of natives in the Canal Zone, and it is by no means uncommon among the natives of the North resident here. The disease flourishes best among those of uncleanly habits and improper and careless personal hygiene. The practice of this class of persons of washing their clothing in streams and pools and of spreading it on the usually moist ground and grass to dry seems to provide a ready means of infection. The infrequency of change of clothing and of bathing may also be mentioned as predisposing factors.

The disease usually appears first, as the name implies, on the inner side of the groin next the body and in the armpits, rapidly spreading, if neglected, over the scrotum, thighs and trunks. Patients frequently present themselves for treatment who have two-thirds of the body surface affected. There first appears a small reddish area of inflammation with slightly raised edges, these spots gradually spread peripherally till they reach the size of a silver dollar or of the palm of the hand. The inflammation in the center of the "circle" recedes as the periphery enlarges. In neglected cases new areas of infection soon appear in the near vicinity and as they enlarge the rings coalesce, forming one large infected area of joining rings. The intense itching, especially at night, makes this disease most annoying and often causes badly infected sores and ulcers as a result of lacerations by the finger nails in an effort to find relief. The tinea cruris et axillaris as seen here does not usually destroy the hair follicles.

The treatment is prophylactic and active. Bathing and changing the underclothing should be practiced at frequent intervals, and all clothing should be thoroughly boiled in the laundry and hung on lines to dry. Effective active treatment will be obtained by cleaning the parts thoroughly with the tincture of green soap and water and applying with some friction the ointments of sulphur or salicylic acid or iodin, this procedure to be repeated once or twice daily for several days, or when comparatively small areas are involved and the individual is of sufficient hardihood to stand the few moments of severe burning, a thorough painting with the tincture of iodin or a solution of salicylic acid in alcohol and ether will very promptly eradicate the fungus. The latter measures sometimes give rise to a troublesome irritative inflammation that will require for a few days the application of one of the mild ointments, as boric acid or 1 per cent. carbolic acid in petrolatum.

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[2] Koenig: Spec. Chir., II, 155, 1889.

Operation.—Incision over tumor revealed an old chronic appendix of such enormous thickness that it was taken at first for a loop of small intestine. The abdomen contained some clear fluid. The appendix was surrounded by dense adhesions protecting several perforations, and on removal measured irregularly 3.5 cm. (1½ in.) in diameter by 12 cm. (5 in.) in length. At its point of origin from the bowel it was of normal caliber. Section showed it to be composed of dense fibrous tissue, surrounding numerous cheesy foci and tubercular granulations. The perforations were apparently not due to pressure necrosis, but to a slow extension of the tuberculous process entirely through the wall of the tube. The raw surfaces left after removing the appendix oozed so freely that gauze drainage was introduced.

Subsequent History.—This represents a slow, but complete and natural recovery from a tuberculous infection, after surgical removal of the major focus. The patient remained under daily observation for twelve weeks; during this time there was a temperature range from 98 F. in the morning to 102 F. in the afternoon, with night sweats. The urine showed constantly a large amount of indican, but no sugar or albumin. The leucocyte count varied for many weeks from 27,000 to 48,000, but the percentage of polymorphonuclear leucocytes was never far from normal. After eight weeks the wound closed, but the temperature and blood count remained so high and the obstructive symptoms were so suggestive that in the tenth week the incision was reopened in the expectation of finding a subphrenic or mesenteric abscess. Nothing was found beyond numerous adhesions and ropes of knotted omentum, which were partially resected and broken up; otherwise, the intraabdominal conditions were very satisfactory, and the wound was closed after freshening all muscular edges to insure protection against subsequent incisional hernia. The second operation had little effect on the progress of the case, except to relieve the partial obstruction; the temperature slowly subsided; the appetite, strength and flesh returned; and for over four years the patient has been to all appearances in the best of health.

COMMENT

This very unusual appendix was the product of an effort to accomplish the inclusion of certain tuberculous foci within a zone of resistance and protection. Undoubtedly the process was over-developed, and resulted in a general fibrous hypertrophy of the entire organ.[1] Hypertrophic appendicitis is of two varieties: (1) a form based on obstruction, in which the muscle fiber is increased through the stimulus of resistance to peristaltic action at the point of obstruction; and (2) a form in which diseased foci are surrounded by protective zones —more or less coalescent—of granulation and fibrous tissue. More commonly the diseased focus originates in a foreign body, but in rare instances, like the present, the irritating material from which exclusion is sought is represented by colonies of the *Bacillus tuberculosis.*

The important clinical points to be noted are: (a) That in spite of the chronic process the onset was apparently sudden, so far as the call for medical aid was concerned; (b) that the case prior to operation gave little hint of the tuberculous source of the trouble; (c) the long-continued postoperative temperature and phenomenally high leucocytosis were incorrectly inferred to represent further mixed infection with abscess formation. In reality they represented a virile and eventually successful resistance to such of the tuberculous material as remained active within the peritoneum after the removal of the principal deposit.

Safe general rules to deduce from this case are: (1) A sharp rise in temperature and leucocyte count, after operations for tuberculous conditions, indicates vigorous resistance, and, other things being equal, should influence a favorable prognosis. (2) Secondary operations, in tubercular cases, unless for well-defined obstruction, are not indicated on the sole basis of fever or high leucocytosis.

TUBERCULOUS PERITONITIS WITH LARGE PSEUDOCYST, AND CHRONIC OBSTRUCTION

Case 2.—Illustrating, (a) ascitic form of tuberculous peritonitis with adhesions; recovery after exploratory incisions, followed by (b) encysted deposit communicating with bowel, "tubercular pseudo-cyst."

History.—In 1906, Dr. W. H. Sands of Fairmount, W. Va., made a laparotomy on R. J., an otherwise apparently healthy young woman, aged 22, unmarried and undoubtedly a virgin. He found a miliary tuberculous peritonitis, extensive in character, moderate ascites, and dense fibrous adhesions between intestines and all the pelvic organs. He removed nothing, dusted well with iodoform and closed without drainage. She left the hospital in three weeks. A mucopurulent discharge from the bowel developed and in eight months she was again operated on, this time for obstruction. Prior to Dr. Sands' second operation she was seen by the writer, who can vouch for her apparently desperate condition. She was of a waxy pallor; the bowels were distended and the abdomen very tender; the evening temperature was high; the bowel movements were scanty or mucopurulent, and the patient was allowed to go to her home on the theory that she was fatally ill with peritoneal and intestinal tuberculosis. On reaching home Dr. Sands broke up many of the adhesions, found no evidence of the former miliary tuberculosis, dusted with iodoform and closed. Recovery again was uneventful. In six months Dr. Sands again saw her with several large joints involved in an apparently tuberculous arthritis. At this time there appeared to be some involvement of the lung. No operation. Weight, 105 pounds. On the subsidence of the arthritis she was sent to the mountains where she remained one year. She then returned to Chicago and came to my office to get work as a nurse. She was a picture of exuberant health—plump, ruddy and vigorous. Weight, 130. Within a month she was again taken with symptoms of acute obstruction and her subsequent history is as follows: Temperature, from 100 to 103 F.; tongue clear; nausea and vomiting frequent; constipation obstinate, but not unyielding; abdomen distended, but rigid and tender only below the line of navel; urine dark brown with strong reaction for indican, no albumin; movements contained some mucopus. In lower left quadrant in the region of the sigmoid there was a swelling, round and tender, about the size of an infant's head at term. Blood count: 18,000.

Diagnosis.—Infected cyst; obstruction from combined effect of chronic adhesions and enlarging cyst.

Treatment.—Under hot applications and a starvation diet the symptoms improved for a few days, and there was some reduction in the size of the tumor, coincident with free evacuations from the bowel, containing pus. But presently the temperature again mounted and the patient was taken to the hospital for operation. A median incision through the old scar —which was hernial—opened a smooth non-tuberculous peritoneal sac, containing a little clear fluid, and traversed by numerous bands and layers of old adhesions, obliterating effectually all organs and landmarks. During the subsequent manipulations neither uterus nor ovaries were recognized as such. The excised mass seemed to be an ordinary infected cyst of the right ovary or broad ligament, which had developed in the usual manner but had assumed rather peculiar relations toward the sigmoid colon in consequence of previous tuberculous infection. The tumor was completely wrapped in the sigmoid flexure; the omentum was not encountered during the operation. With great difficulty a line of cleavage was secured along the anterior aspect of the tumor, and the growth was literally dug out of the pelvis. Several small thin-walled cysts, containing clear fluid and lying apparently close against the uterus were also enucleated; these had no connection with the larger tumor except by contiguity. While separating the tumor from the upper part of the rectum, the adhesions were so close that the cyst wall gave way, allowing a quantity of brownish fluid of fecal odor to escape. The raw rectal wall was at once carefully examined, but no bowel opening could be detected, and after closing the opening in the cyst with forceps, the enucleation was completed. There was no hemorrhage from any single large vessel, although the oozing from torn surfaces was profuse. The tumor had been contained in a sort of globular cavity made up of pelvic wall, sigmoid and rectum, bladder and uterus, and there was not the least suggestion of pedicle. The adjacent bowels were then cleaned and examined for perforations, but, although the surfaces were unhealthy and denuded, they presented no macroscopic tubercular nodules and no perforation could be discovered. Three cigarette drains were introduced, two to the depths of the cavity and one to the most suspicious bowel surface, and the abdomen was closed after excising the hernial sac and renewing the normal relations of all the parietal structures to the median line. The operation was followed by great vascular shock and considerable vomiting and distention, but in five days improvement was coincident with the appearance of a fecal fistula, through which escaped, at first, all of the evacuations and large quantities of flatus. Presently, however, the rectum resumed its function, the temperature became continuously normal, the appetite and strength improved, the fecal discharge ceased, and at the present writing conditions point toward a speedy permanent wound healing under occasional treatment of the fistulous tract with Beck's paste. Weight, 124, and increasing.

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[1] A similar case is reported by Murphy in the Am. Jour. Obstet., 1904, xlix.

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Such pseudocysts are mere sacculated receptacles for morbid products, and are to be differentiated from true cysts of the genital tract by their lack of true lining and covering membranes, by the thickness and inelasticity of their walls, and by the wall itself being composed entirely of inflammatory material. Their origin is usually tuberculous. Clinically, these deposits are commonly taken for ordinary pelvic cysts, or for tubo-ovarian abscesses, and there is no possible way to identify them prior to operation, except through inferences drawn from the history.[2]

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ALFRED G. FARMER, M.D.
Physician, Gatun Dispensary, Isthmian Canal Commission
GATUN, CANAL ZONE

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The disease usually appears first, as the name implies, on the inner side of the groin next the body and in the armpits, rapidly spreading, if neglected, over the scrotum, thighs and trunks. Patients frequently present themselves for treatment who have two-thirds of the body surface affected. There first appears a small reddish area of inflammation with slightly raised edges, these spots gradually spread peripherally till they reach the size of a silver dollar or of the palm of the hand. The inflammation in the center of the "circle" recedes as the periphery enlarges. In neglected cases new areas of infection soon appear in the near vicinity and as they enlarge the rings coalesce, forming one large infected area of joining rings. The intense itching, especially at night, makes this disease most annoying and often causes badly infected sores and ulcers as a result of lacerations by the finger nails in an effort to find relief. The tinea cruris et axillaris as seen here does not usually destroy the hair follicles.

The treatment is prophylactic and active. Bathing and changing the underclothing should be practiced at frequent intervals, and all clothing should be thoroughly boiled in the laundry and hung on lines to dry. Effective active treatment will be obtained by cleaning the parts thoroughly with the tincture of green soap and water and applying with some friction the ointments of sulphur or salicylic acid or iodin, this procedure to be repeated once or twice daily for several days, or when comparatively small areas are involved and the individual is of sufficient hardihood to stand the few moments of severe burning, a thorough painting with the tincture of iodin or a solution of salicylic acid in alcohol and ether will very promptly eradicate the fungus. The latter measures sometimes give rise to a troublesome irritative inflammation that will require for a few days the application of one of the mild ointments, as boric acid or 1 per cent. carbolic acid in petrolatum.

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[2] Koenig: Spec. Chir., II, 155. 1889.

CASE OF LYMPHATIC LEUKEMIA

H. H. HAZEN, M.D.
WASHINGTON, D. C.

On account of the marked blood picture the following case of lymphatic leukemia seems worth reporting:

Patient.—M. D., aged 60, Irish, a watchman. The family and past history are both unimportant. The patient denied any venereal disease and had never used alcohol. He had always been a strong, healthy, hard-working man.

Present Illness.—During the summer of 1903 he noticed enlarged glands in the neck, axillæ and groins, together with slight weakness. He had been unsuccessfully treated by several physicians. He first came under observation Oct. 28, 1904, complaining of general weakness, epistaxis and enlarged glands. He was put on potassium iodid, and in two weeks the glands had become smaller and softer; they soon regained their usual large size, however. The probable diagnosis of leukemia was made and the patient was put on Fowler's solution, which did not help him.

Examination.—Late in November I saw the patient. He was a well-nourished man, with skin a trifle bronzed, lips and mucous membrane extremely pale. Lungs and heart were normal; abdomen was distended with fluid; the liver was not palpable, but the spleen extended a full hand's breadth below the costal margin. In the anterior triangles of the neck there were enlarged glands, some being as much as 6 cm. long. They were discrete and very hard; the axillary and inguinal glands were also markedly enlarged. From neither the history nor examination was there any evidence of involvement of the mediastinal glands. The legs were slightly edematous; the urine was absolutely normal. One month later a blood examination was made, with the following results: Hemoglobin, 20 per cent.; red cells, 960,000; white cells, 250,000. A smear showed the red cells to be normal in appearance; no nucleated reds and no megaloblasts were seen. The predominating white blood cells were small mononuclear non-granular cells, typical lymphocytes. Only two polymorphonuclears were seen. There were no eosinophiles, no mast-cells, no large mononuclears, and no myelocytes.

Course of Disease.—While I did not see the patient again, I am informed by his physician that he grew steadily weaker, that he had severe attacks of epistaxis and that his liver became enlarged. Death took place on Feb. 12, 1905. No autopsy was permitted.

1204 Eighteenth Street.

TUBERCULOSIS EXHIBIT AND CABINET

FRANK B. WYNN, M.D.
INDIANAPOLIS

This descriptive article is published as a means of answering numerous inquiries concerning the tuberculosis exhibit shown at the recent American Medical Association session in the name of the Indianapolis Medical Society. As will be seen from the picture, the exhibit is housed in a handsome and substantial cabinet, consisting of an upper show case in which are placed models of pavilions, shacks, tents and devices used in the treatment of tuberculosis. Appended to each of the models are brief data as to materials and cost of construction. At one end of the cabinet is a flashlight transparency, which announces that with the lapse of every three seconds another victim has been claimed by tuberculosis.

The lower half of the case consists of two drawers, 10 by 14 by 22 inches in size, opening on opposite sides of the case. This enables several persons to be examining the contents of the drawers at the same time. In these drawers are anchored (similar to any index file) a hundred or more heavy cards on which are photographs, cartoons and diagrams with appropriate descriptions, statistical data, mottoes, sanitary dicta, etc., relating to the whole problem of tuberculosis.

Signs in the glass case call attention to the drawers below where the observer is invited to learn the story of the great white plague. A smaller cabinet embodying the same principles can be manufactured for at least half the price of the larger one.

Marvelous strides have been made in preventive medicine during the past two decades through the usual health board [illegible]. circulars, popular lectures and tl [illegible] these means are being supplemented by exhibits relating to public health problems—notably tuberculosis. While they represent the most efficient means thus far employed to enlighten the public on sanitary questions, they are open to the serious objection of cumbersomeness and expense in maintenance. They are presented for a few days in the community and perhaps never again. Such spasmodic efforts can not bear the good fruit that would arise from means which could keep the question constantly before the people.

DISADVANTAGES OF PAST METHODS

As a concrete example take the exhibit of the New York Charities Organization. It is the most complete and comprehensive that has been devised in this country. Installed for a few days now in one part and now in another part of New York City, it has been of incalculable value in teaching, especially the lower classes, the story of tuberculosis in all its aspects. But however excellent, a fair criticism of the practicability of this exhibit (and similar ones) may be made on the following grounds:

1. Its primary cost, which must have been from $1,200 to $1,500.
2. The cost of housing—a large room being necessary.
3. Expense of moving, installing and proper supervision. (The cost of its presentation at the Atlantic City meeting of the American Medical Association was over a hundred dollars.)
4. The short period of time during which it is maintained in any given place.

ADVANTAGES OF THIS EXHIBIT

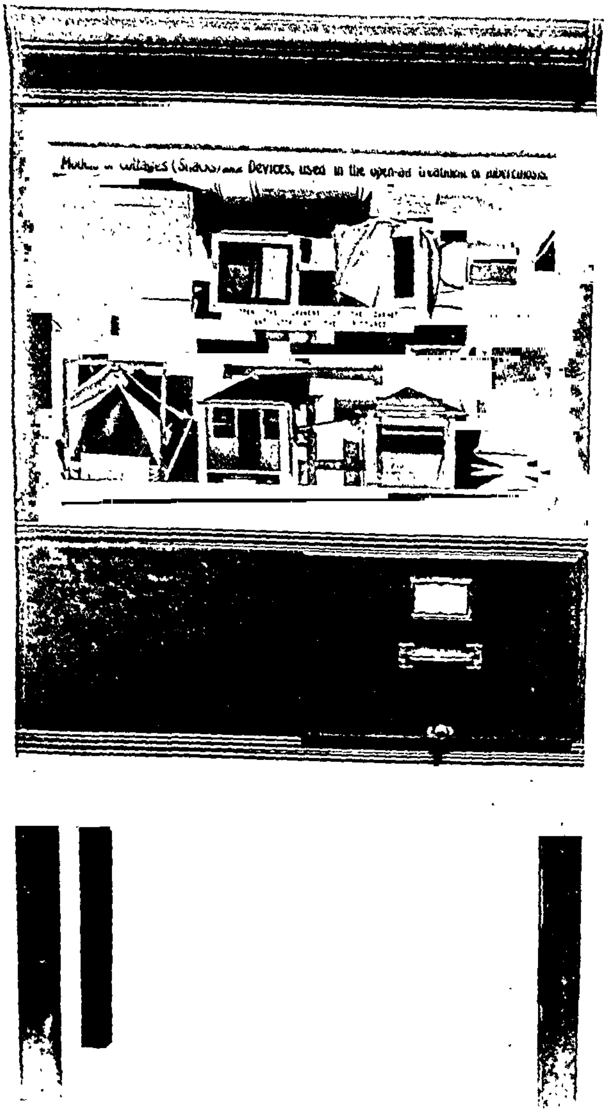
To overcome such objections as the foregoing the Scientific Exhibit Committee of the American Medical Association has for the past two years been endeavoring to interest sanitarians in developing a compact but comprehensive tuberculosis exhibit. Five were offered at the last meeting, each having distinct points of merit. The one herein described does not fulfill all requirements, but I believe has much to commend it. The advantages may be summarized as follows:

1. Compactness, neatness and stability: The cabinet takes up but little room and can stand with safety in any public building where crowds congregate.
2. Completeness: Although compact, it can be made to contain as much as the large exhibits—all that is necessary for the instruction of the public.
3. It requires no supervision, but tells its own story graphically.
4. Cost: If manufactured in large numbers, they could be sold at a figure sufficiently low to enable health boards to place them in railway stations, court-houses, public libraries and like places.
5. The continuity of effort would bring home to the people the lessons of the tuberculosis problem every day of the year.
6. The same cabinet might be used as occasion required for instruction on other sanitary matters.

PROBLEM OF PRODUCTION

To the many inquiries which have been made as to the cost of these cabinets and where they may be obtained, no satisfactory answer can be made. Two large concerns have made overtures looking to their manufacture. In order to secure the widest possible educational effect, it is desirable that the exhibits be sold almost at cost to insure their general use. Is it practicable to attain this end? Why should not the Board of Trustees of the Association, the Scientific Exhibit Committee or other regularly constituted representative undertake the supervision of this undertaking? Let them ascertain through experts the lowest figure at which these cabinets, equipped, can be made. Then secure an agreement from some reputable firm to market them at this price.

The Association's endorsement would insure large sale. Let the manufacturer pay the Association a royalty to cover the expense of proper supervision of the data that go into the cabinets. These would need to be varied to suit localities and states. Such supervision would insure the introduction of such matter only as would be prudent and sane; sufficiently instructive to the lay mind on tuberculosis and other sanitary questions, but so tempered as not to excite ridicule or unnecessarily alarm the people on such matters. It would offer the Association an opportunity to render most effective cooperative aid to health authorities and, therefore, would prove of great service in the march of preventive medicine—a field in which the Association, as an organization, has as yet done but little.

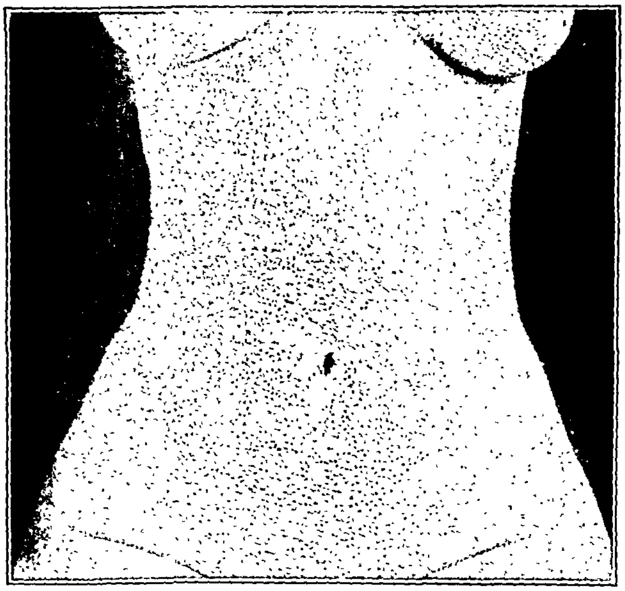

Models of Cottages (Shacks) and Devices, used in the open-air treatment of tuberculosis.

311 Newton Claypool Building.

A CASE OF SYPHILIS RESEMBLING PITYRIASIS RUBRA PILARIS

HOWARD FOX, M.D.
NEW YORK CITY

The following case of miliary papular syphilis is of interest on account of its very close resemblance to the papular stage of pityriasis rubra pilaris. When seen in August, 1908, at the Vanderbilt Clinic, the patient, a widow of 30, presented a general eruption of the face, trunk and extremities. This consisted, for the most part, of small, conical, pin-head papules, capped with horny scales. There was no tendency for the lesions to become confluent and there were no signs of itching. On the face there were erythematous and scaly lesions that might have occurred with either of the diseases in question. There was no history of any genital sore, no glandular enlargement and no lesions of the mouth. The palms were thickened and scaly, but did not present the appearance characteristic of the early palmar syphilide. While the eruption simulated a pityriasis rubra pilaris very closely, it was noticed that there was a slight tendency of the papules to follicular grouping so characteristic of miliary papular syphilide. Further, the appearance of the backs of the phalanges generally noted in pityriasis rubra pilaris was absent.


A case of miliary papular syphilis in which the eruption simulated pityriasis rubra pilaris.

When the case was first seen I had not begun to work with the Wassermann test, and a clinical diagnosis alone was possible. To show the great difficulty in diagnosis it may be said that a distinguished dermatologist of the city pronounced the case to be unquestionably one of pityriasis rubra pilaris. The patient was kept under observation for two weeks, at the end of which time the lesions began to show a tendency to become papulosquamous, and she was then put on antisyphilitic treatment; within a month the greater part of the eruption had disappeared. The patient then became somewhat irregular in attendance at the clinic,

and a few weeks later developed a rather severe iritis. For the privilege of reporting this case I am indebted to Dr. George T. Jackson.

616 Madison Avenue

AN OPERATING-TABLE

D. TOD GILLIAM, M.D.
COLUMBUS, O.

The special features of this table are:

1. An extension rod which slides in and out at the foot of the table.
2. The leg-holders, which fit into the posts and which can be set at any height by means of a set-screw.
3. A revolving instrument tray which is attached to the leg-holder can be raised or lowered at will.
4. The body-lift, plain, or provided with movable side brackets to fix the kidney during operation and to keep the patient from rolling.
5. The shoulder-supports, small, neat and movable. They are hinged at the sides of the table and can be adjusted immediately for use or turned under the table out of the way.
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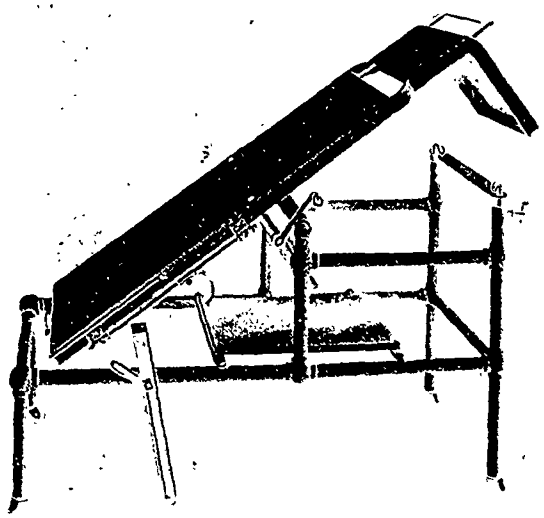

An improved operating-table.

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The extension rod at the end of the table has many uses:

1. In vaginal or rectal operation a towel thrown over it protects the sutures from contact with the drop.
2. Drawn out a little further it makes a foot-rest for the patient in examination or treatment.
3. It holds a douche-pan in vaginal or rectal operations.
4. Pulled out so as to allow the legs to be lowered through it and strapped to the drop, the same douche-pan, placed between the end of the extension rod and the patient's knees, acts as a receptacle for soiled sponges in abdominal operations.
5. By placing the shelf from under the table on it and adjusting the extension rod to the length of the patient, a full-length table is obtained exactly fitted to his stature.

Every attachment is an integral part of the table and always at hand, there being no pieces to lay aside and gather up when needed. Also there are no hinged leaves or other unstable parts to the table.

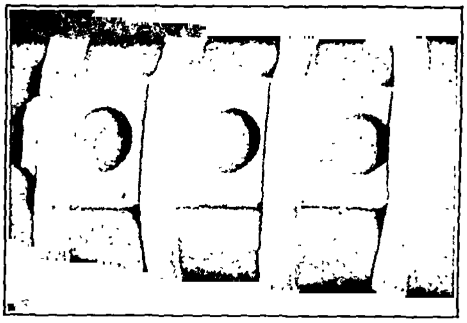
50 North Fourth Street.

A PROTECTOR FOR USE IN THE CUTANEOUS TEST FOR TUBERCULOSIS

R. L. SUTTON, M.D.
KANSAS CITY, MO.

In applying the cutaneous test for tuberculosis, the scarified surfaces, unless covered, are subjected to irritation and possible infection from without.

Protection usually is secured by the use of a soft, smooth dressing, as a linen or silk handkerchief, applied as a bandage directly over the wound. While this method serves very well in many instances, it is open to some objections. The cloth comes closely in contact with the excoriated surfaces and is liable to irritate, causing misleading inflammation; the dressing is difficult to keep in place, especially on the forearm (the part commonly selected); and the progress of the reaction can not be observed without removing the bandage.



Protector for use in the cutaneous tuberculosis test.

I have found an oblong felt protector, like the one shown in the accompanying illustration, of considerable value. It is made on the same principle as the widely used vaccination pads, and the openings are covered with thin, transparent celluloid. The dressing is firmly held by four short, transverse strips of adhesive plaster.

518 Commerce Building.

Special Article

SEVENTH ANNUAL SUMMARY OF FOURTH OF JULY INJURIES

For the seventh consecutive year we are presenting statistics of injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries. Considerable effort has been made to secure reliable data, and all serious cases have been carefully investigated, so that, so far as the figures go, dependence may be placed on them. We have received thousands of letters from physicians in all parts of the country, reporting cases which otherwise could not have been included in the statistics. There are doubtless thousands of other cases not reported, although chiefly minor injuries. Our thanks are due for the many careful reports which have made these statistics more complete and the figures more reliable. The data are presented in the same manner as heretofore, in order that comparison may be made.

MORE CASES OF TETANUS

There were 150 tetanus cases this year, almost double the record of last year, when 76 cases were reported. This is the largest number since 1903, when there were 415 cases. It is significant to note that the number of blank cartridge wounds correspondingly increased from 816 last year to 1,095 this year, and that the states having the largest numbers of blank cartridge injuries have

also the largest numbers of tetanus cases (Table 5). It is interesting also to state that from blank cartridge wounds there was a higher percentage of deaths (10.2) than from gunshot wounds (6.1 per cent.).

The most common cause of the wound is the blank cartridge, and the usual site is the hand. The duration given is the number of days between the injury and death or recovery. Following the injury it required from 5 to 15 days before the symptoms of tetanus appeared, the average of all fatal cases being about 7 days. The longer

TABLE 1.—CASES OF TETANUS

Name.	Sex.	Age.	Cause of Wound.	Site of Wound.	Duration in Days.	Result.
			CALIFORNIA			
Benbow	M	16	Bl. ctg.	Hand	10	D.
Gardner	M	45	Firecracker.	Hand	11	D.
			DELAWARE			
Corbin	M	13	Bl. ctg.	Hand.	(6) 8	D.
Smith	M	17	Bl. ctg.	Hand	7	D.
			FLORIDA			
Padgett	M	12	Bl. ctg.	Hand	..	
			IDAHO			
Hendricks	M	27	Gunshot	Ankle	10	D.
			ILLINOIS			
Allen	M	11	Bl. ctg.	Finger	(4)13	D.
Brown	M	14	Bl. ctg.	Hand	9	D.
Bingaman	M	8	Bl. ctg.	Hand	..	D.
Cook	M	13	Bl. ctg.	Hand	9	D.
Ebright	M	14	Bl. ctg.		7	D.
Ford	M					D.
German	M					D.
						D.
						R.
Hailey	M					R.
Monson	M					D.
						..
						D.
						D.
						R.
						..
Reinhard	M					D.
Simmons	M					D.
Stoffel	M					D.
Verbelia	M					D.
			INDIANA			
Callahan	M	11	Bl. ctg.	Hand	..	D.
		12	Bl. ctg.		18	D.
		13	Bl. ctg.	Hand	9	D.
		12	Bl. ctg.		7	D.
Lacey	M	13			7	D.
Lurok	M	15			7	D.
McCoy	M	..	Bl. ctg.		8	D.
Thompson	M	16	Bl. ctg.	Leg	20	D.
Webster	M	13	Bl. ctg.	Hand	8	D.
			IOWA			
Parks	M	11	Bl. ctg.	Hand	9	D.
			KANSAS			
Allen	F	6	Bl. ctg.	Hand	14	D.
Clark	M	16	Bl. ctg.	Hand	11	D
Miller	M	16	Gunshot	Knee	7	D.
Van Meter	M	Boy.	Bl. ctg.		..	D.
Williams	M	8	Bl. ctg.	Penis.	(7)10	D.
Yocum	M	9	Bl. ctg.	Hand	9	D.
			KENTUCKY			
Gill	M	8	Bl. ctg.	Hand	..	..
			MAINE			
Pitts	M	13	Bl. ctg.	Hand	11	D.
			MARYLAND			
Behrman	M	18	Bl. ctg	Finger	(10)48	R.
Cavey	M	14	Bl. ctg.	Hand	14	D.
			MASSACHUSETTS			
Blanchette. C.	M	15	Bl. ctg.	Hand	(5)11	D.
Bouchard, A.	M	14	Bl. ctg.	Hand	17	D
Brown	F	24	Bl. ctg.	Thigh	(15)20	D.
Joseph	M	20	Bl. ctg.	Hand	(6) 9	D.
Killeen	M	29	Bl. ctg.	Hand	7	D.
Nagen	M	14				D.
Norton	M	11				R.
Silva	M	23				R.
			MICHIGAN			
Ashlund	M	12	Bl. ctg.	Hand	9	D.
Barnett	M	13	Bl. ctg.	Hand	(7)12	D.
		10	Bl. ctg.	Hand	7	D.
		15			16	D.
Lawler	M	11			..	..
McRorie	M	12				D.
Morrison	M	13			9	D.
Schaff	M	10	Bl. ctg.	Hand	7	D
Sheridan	M	12	Bl. ctg.		..	..
Stewart	M	15	Bl. ctg.	Hand	..	D.
Strafton	M	16	Bl. ctg.	Hand	18	D.
			MISSOURI			
Adair	M	Boy.	Powder expl.	Arm	18	D.
Cooper	M	16	Bl. ctg.	Hand	10	D.
Enloe	M	13	Bl. ctg.	Hand	9	D.
Hogan	F	26	Bl. ctg.	Hand	..	D.
Judson	M	10	Bl. ctg.	Hand	7	D.
Neland	M	10	Bl. ctg.	Hand	(5)11	D.
Solomon	M	10	Bl. ctg.	Hand	11	D.
Taylor	M	11	Bl. ctg.	Hand	11	D.
			MONTANA			
Kelly	M	23	Bl. ctg.	Hand	10	D
Mulholland	M	16	Bl. ctg.	Hand	..	D.
Staten	M	7	Bl. ctg.	Hand	10	D.
			NEBRASKA			
Dlargy	M	12	Rocket.	Hand	..	D.
Pop	M	Adult.	Bl. ctg.	Hand	10	D.
Watkins	M	13	Bl. ctg.	Hand	9	D.
			NEW HAMPSHIRE			
Boyle	M	17	Bl. ctg.	Hand	(7) 9	D.
			NEW JERSEY			
Campbell	M	12	Bl. ctg.	Hand	(6)14	D.
Da Costa	M	..	Gunshot	Finger	10	D.
Fischer	M	14			7	D.
Francke	M	13			10	D.
Frisco	M	13			..	..
Goldstein	M	8	Bl. ctg.		9	D.
Guthrie	M	9	Bl. ctg.	Hand	(6) 8	D.
		14	Bl. ctg.	Hand	8	D.
		14	Bl. ctg.	Hand	18	R.
Keley	M	13	Bl. ctg.	Hand	7	D.
Long	M	12	Bl. ctg.	Hand	8	D.
		14	Bl. ctg.	Finger	10	D.
		..				..
		14				D.
		13				D.
		12				D.
Walters	M	12				D.
Weigel	M	11				R.
Wilson	M	12				R.
			NEW YORK			
Brightman	M	13	Bl. ctg.	Hand	12	D.
Jeriorski	M	11	Bl. ctg.	Hand	20	D.
Last	M	10	Bl. ctg.	Hand	7	D.
Mafredonia	M	10	Bl. ctg.	Hand	..	D.
Ohlowald	M	14	Bl. ctg.	Hand	9	D.
Otis	M	8	Bl ctg	Hand	6	D.
Schroeder	M	15	Bl. ctg.	Hand	11	D.
Schultz	M	31	Gunshot	Thigh	(7) 9	D.
Stanway	M	18				D.
Tater	M	12				D.
Wiegland	M	11				D.
			OHIO			
Combow	M	14	Powder expl.	Hand	16	R.
Getroast	M	12	Bl. ctg.	Hand	10	D.
Lewe	M	11	Bl. ctg.	Hand	(7)10	D.
Manuel	M	12	Bl. ctg.	Hand	8	D.
Marcum	M	12	Bl. ctg.	Hand	..	D.
Parkos	M	13	Bl. ctg.	Finger	(5)14	D.
Seaman	M	13	Fireworks		18	D.
Sells	M	10	Bl. ctg.	Hand	10	D.
Sliman	M	15	Bl. ctg.	Hand	..	
Stokely	M	10	Bl. ctg.	Hand	9	D.
Tindall	M	14	Bl. ctg.		12	D.
Underwood	M	Boy.	Bl. ctg.	Hand	16	D.
			PENNSYLVANIA			
Breich	M	16	Bl. ctg	Hand	8	D.
Coles	M	15	Bl. ctg.	Leg	6	D.
Donovan	M	13	Bl. ctg.		15	D.
Farber	M	18	Bl. ctg.	Finger	22	D.
Houpt	M	15	Bl. ctg	Groin.	6	D.
Koslovski	M	11	Bl. ctg.	Hand	11	D.
Kowalick	M	6	Bl. ctg	Hand	..	..
Maxwell	M	13	Bl. ctg.	Finger	12	D.
Scott	M	Boy.	Firecracker	Leg	..	..
Werts	M	13	Bl. ctg	Finger	10	D.
			SOUTH DAKOTA			
Phebus	M	11	Bl. ctg.	Finger	9	D.
			WASHINGTON			
Brown	M	11	Bl. ctg.	Hand	..	..
Nelson	M	13	Bl. ctg.	Hand	7	D.
Perry	M	14	Bl. ctg.	Hand	..	..
Roth	M	10	Bl. ctg.	Hand	6	D.
			WEST VIRGINIA			
Comedy	M	13	Bl. ctg.	Hand	..	D.
Llewellyn	M	9	Bl. ctg	Hand	16	D.
Parshall	F	15	Firecracker	Hand	..	..
Robinson	M	10	Bl. ctg.	Hand	6	D.
			WISCONSIN			
Briscoe	M	12	Bl. ctg.	Finger	(6) 8	D
[illegible]	M	11	Bl. ctg.	Hand	11	D
[illegible]	M	15	Bl. ctg.	Hand	9	D.
Golden	M	11	Bl. ctg.	Hand	8	D.
		13	Firecracker	Hand	(3)13	D.
		16	Bl. ctg.	Hand	8	D.
		11	Bl. ctg.	Hand	9	D.
		30	Bl ctg.		8	D.
		..	Powder expl.		18	D.

Figures in parentheses show incubation period.

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616 Madison Avenue

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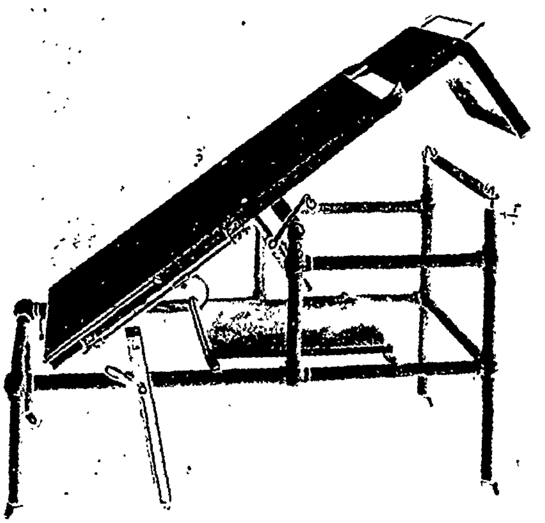

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R. L. SUTTON, M.
KANSAS CITY.

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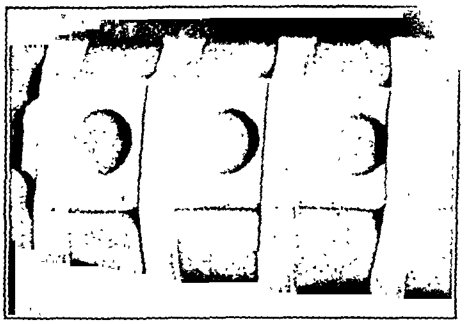

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Smith	M	17	Bl. ctg.	Hand	7	D.
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Bingaman	M	8	Bl. ctg.	Hand	..	D.
Cook	M	13	Bl. ctg.	Hand	9	D.
Ebright	M	11	Bl. ctg.		7	D.
Ford	M					D.
[illegible]	M					D.
	..					D.
	..					R.
	..					R.
	..					D.
	.					..
	..					D.
	..					D.
						R.
[illegible]	M					..
Remillard	M					D.
Simmons	M					D.
Stoffel	M					D.
Verbelia	M					D.
			INDIANA			
Callahan	M	11	Bl. ctg.	Hand	..	D.
Czerwinski	M	12	Bl. ctg.		18	D.
Dolson	M	13	Bl. ctg.	Hand	9	D.
Kennedy	M	12	Bl. ctg.		7	D.
Lacey	M	13	Bl. ctg.	Hand	7	D.
Lurok	M	15	Firecracker	Thumb	7	D.
McCoy	M	..	Bl. ctg.		8	D.
Thompson	M	16	Bl. ctg.	Leg	20	D.
Webster	M	13	Bl. ctg.	Hand	8	D.
			IOWA			
Parks	M	11	Bl. ctg.	Hand	9	D.
			KANSAS			
Allen	F	6	Bl. ctg.	Hand	14	D.
Clark	M	16	Bl. ctg.	Hand	11	D
Miller	M	16	Gunshot	Knee	7	D.
Van Meter	M	Boy.	Bl. ctg.		..	D.
Williams	M	8	Bl. ctg.	Penis	(7)10	D.
Yocum	M	9	Bl. ctg.	Hand	9	D.
			KENTUCKY			
Gill	M	8	Bl. ctg.	Hand	..	..
			MAINE			
Pitts	M	13	Bl. ctg.	Hand	11	D.
			MARYLAND			
Behrman	M	18	Bl. ctg	Finger	(10)48	R.
Cavey	M	14	Bl. ctg.	Hand	14	D.
			MASSACHUSETTS			
Blanchette, C.	M	15	Bl. ctg.	Hand	(5)11	D.
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	..	29	Bl. ctg.	Hand	7	D.
	..	14				D.
	..	11				R.
	..	23				R.
			MICHIGAN			
Ashlund	M	12	Bl. ctg.	Hand	9	D.
[illegible]	M	13	Bl. ctg.	Hand	(7)12	D.
	..	10	Bl. ctg.	Hand	7	D.
	..	15	Firecracker		16	D.
Lawler	M	11	Bl. ctg.	Hand	..	..
McRorie	M	12	Bl. ctg.	Hand		D.
Morrison	M	13	Bl. ctg.		9	D.
Schall	M	10	Bl. ctg.	Hand	7	D
Sheridan	M	12	Bl. ctg.		..	.
Stewart	M	15	Bl. ctg.	Hand	..	D.
Straffon	M	16	Bl. ctg.	Hand	18	D.
			MISSOURI			
Adair	M	Boy.	Powder expl.	Arm	18	D.
Cooper	M	16	Bl. ctg.	Hand	10	D.
Enloe	M	13	Bl. ctg.	Hand	9	D.
Hogan	F	26	Bl. ctg.	Hand	..	D.
Judson	M	10	Bl. ctg.	Hand	7	D.
Neland	M	10	Bl. ctg.	Hand	(5)11	D.
Solomon	M	10			11	D.
Taylor	M	11			11	D.
			MONTANA			
Kelly	M	23	Bl. ctg.	Hand	10	D
Mulholland	M	16	Bl. ctg.	Hand	..	D.
Staten	M	7	Bl. ctg.	Hand	10	D.
			NEBRASKA			
Dlargy	M	12	Rocket	Hand	..	D.
Pop	M	Adult.	Bl. ctg.	Hand	10	D.
Watkins	M	13	Bl. ctg.	Hand	9	D.
			NEW HAMPSHIRE			
Boyle	M	17	Bl. ctg.	Hand	(7) 9	D.
			NEW JERSEY			
Campbell	M	12	Bl. ctg.	Hand	(6)14	D.
Da Costa	M	..	Gunshot	Finger	10	D.
Fischer	M	14			7	D.
Francke	M	13			10	D.
Frisco	M	13			..	..
Goldstein	M	8	Bl. ctg.		9	D.
[illegible]	M	9	Bl. ctg.	Hand	(6) 8	D.
	..	14	Bl. ctg.	Hand	8	D.
	..	14	Bl. ctg.	Hand	18	R.
	..	13	Bl. ctg.	Hand	7	D.
	..	12	Bl. ctg.	Hand	8	D.
McIntyre	M	14				D.
Martin	M	..				..
Miner	M	14				D.
Penn	M	13				D.
Riccio	M	12				D.
Walters	M	12				D.
Weigel	M	11				R.
Wilson	M	12				R.
			NEW YORK			
Brightman	M	13	Bl. ctg.	Hand	12	D.
Jeriorski	M	11	Bl. ctg.	Hand	20	D.
Last	M	10	Bl. ctg.	Hand	7	D.
Mafredonia	M	10	Bl. ctg.	Hand	..	D.
Ohlowald	M	14	Bl. ctg.	Hand	9	D.
Otis	M	8	Bl ctg	Hand	6	D.
Schroeder	M	15	Bl. ctg.	Hand	11	D.
Schultz	M	31	Gunshot	Thigh	(7) 9	D.
Stanway	M	18	Bl. ctg.	Finger	14	D.
Tat‑r	M	12	Firecracker	Hand	(8)10	D.
Wiegland	M	11	Bl. ctg.	Hand	..	D.
			OHIO			
Combow	M	14	Powder expl.	Hand	16	R.
Getroast	M	12	Bl. ctg.	Hand	10	D.
Lewe	M	11	Bl. ctg.	Hand	(7)10	D.
Manuel	M	12	Bl. ctg.	Hand	8	D.
Marcum	M	12	Bl. ctg.	Hand	..	D.
Parkos	M	13	Bl. ctg.	Finger	(5)14	D.
Seaman	M	13	Fireworks		18	D.
Sells	M	10	Bl. ctg.	Hand	10	D.
Sliman	M	15	Bl. ctg.	Hand	..	
Stokely	M	10	Bl. ctg.	Hand	9	D.
Tindall	M	14	Bl. ctg.		12	D.
Underwood	M	Boy.	Bl. ctg.	Hand	16	D.
			PENNSYLVANIA			
Breich	M	16	Bl. ctg.	Hand	8	D.
Coles	M	15	Bl. ctg.	Leg	6	D.
Donovan	M	13	Bl. ctg.		15	D.
Farber	M	18	Bl. ctg.	Finger	22	D.
Houpt	M	15	Bl. ctg	Groin	6	D.
Koslovski	M	11	Bl. ctg.	Hand	11	D.
Kowalick	M	6	Bl. ctg.	Hand	..	..
Maxwell	M	13	Bl. ctg.	Finger	12	D.
Scott	M				..	..
Werts	M				10	D.
			SOUTH DAKOTA			
Phebus	M	11	Bl. ctg.	Finger	9	D.
			WASHINGTON			
Brown	M	11	Bl. ctg.	Hand	..	..
Nelson	M	13	Bl. ctg.	Hand	7	D.
Perry	M	14	Bl. ctg.	Hand	..	..
Roth	M	10	Bl. ctg.	Hand	6	D.
			WEST VIRGINIA			
Comedy	M	13	Bl. ctg.	Hand	..	D.
Llewellyn	M	9	Bl. ctg	Hand	16	D.
Parshall	F	15	Firecracker	Hand	..	..
Robinson	M	10	Bl. ctg.	Hand	6	D.
			WISCONSIN			
Briscoe	M	12	Bl. ctg.	Finger	(6) 8	D
Darling	M	11	Bl. ctg.	Hand	11	D.
Dakonich	M	15	Bl. ctg.	Hand	9	D.
Golden	M	11	Bl. ctg.	Hand	8	D.
Micka	M	13	Firecracker	Hand	(3)13	D.
Peterson	M	16	Bl. ctg.	Hand	8	D.
Rhein	F	11	Bl. ctg.	Hand	9	D.
Rutz	F	30	Bl ctg.		8	D.
Zettman	M	..	Powder expl.		18	D.

Figures in parentheses show incubation period.

and a few weeks later developed a rather severe iritis. For the privilege of reporting this case I am indebted to Dr. George T. Jackson.

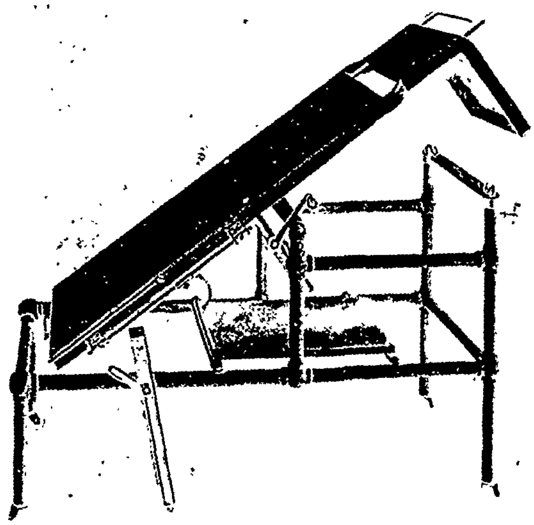
616 Madison Avenue

AN OPERATING-TABLE

D. TOD GILLIAM, M.D.
COLUMBUS, O.

The special features of this table are:

1. An extension rod which slides in and out at the foot of the table.
2. The leg-holders, which fit into the posts and which can be set at any height by means of a set-screw.
3. A revolving instrument tray which is attached to the leg-holder can be raised or lowered at will.
4. The body-lift, plain, or provided with movable side brackets to fix the kidney during operation and to keep the patient from rolling.
5. The shoulder-supports, small, neat and movable. They are hinged at the sides of the table and can be adjusted immediately for use or turned under the table out of the way.
6. A support for rectal treatment or for maintaining the knee-chest posture. This is effected by a strap extending from one leg-holder to the other at a proper height; the patient kneels on the shelf covered by a blanket, his body thrown forward over the strap.



An improved operating-table.

7. The shield between the anesthetist and operator, which fits snugly around the end of the table when not in use, and which can be raised to the vertical or any desired angle and fixed by a set-screw when needed.

The extension rod at the end of the table has many uses:

1. In vaginal or rectal operation a towel thrown over it protects the sutures from contact with the drop.
2. Drawn out a little further it makes a foot-rest for the patient in examination or treatment.
3. It holds a douche-pan in vaginal or rectal operations.
4. Pulled out so as to allow the legs to be lowered through it and strapped to the drop, the same douche-pan, placed between the end of the extension rod and the patient's knees, acts as a receptacle for soiled sponges in abdominal operations.
5. By placing the shelf from under the table on it and adjusting the extension rod to the length of the patient, a full-length table is obtained exactly fitted to his stature.

Every attachment is an integral part of the table and always at hand, there being no pieces to lay aside and gather up when needed. Also there are no hinged leaves or other unstable parts to the table.

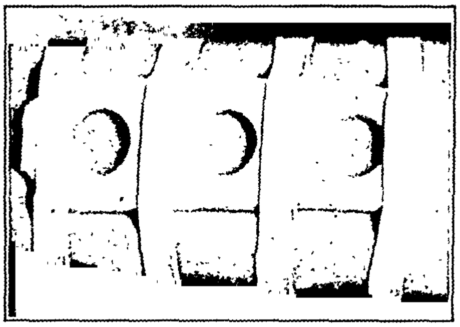
50 North Fourth Street.

A PROTECTOR FOR USE IN THE CUTANEOUS TEST FOR TUBERCULOSIS

R. L. SUTTON, M.D.
KANSAS CITY, MO.

In applying the cutaneous test for tuberculosis, the scarified surfaces, unless covered, are subjected to irritation and possible infection from without.

Protection usually is secured by the use of a soft, smooth dressing, as a linen or silk handkerchief, applied as a bandage directly over the wound. While this method serves very well in many instances, it is open to some objections. The cloth comes closely in contact with the excoriated surfaces and is liable to irritate, causing misleading inflammation; the dressing is difficult to keep in place, especially on the forearm (the part commonly selected); and the progress of the reaction can not be observed without removing the bandage.



Protector for use in the cutaneous tuberculosis test.

I have found an oblong felt protector, like the one shown in the accompanying illustration, of considerable value. It is made on the same principle as the widely used vaccination pads, and the openings are covered with thin, transparent celluloid. The dressing is firmly held by four short, transverse strips of adhesive plaster.

518 Commerce Building.

Special Article

SEVENTH ANNUAL SUMMARY OF FOURTH OF JULY INJURIES

For the seventh consecutive year we are presenting statistics of injuries received during the celebration of the Fourth of July, with particular reference to tetanus resulting from these injuries. Considerable effort has been made to secure reliable data, and all serious cases have been carefully investigated, so that, so far as the figures go, dependence may be placed on them. We have received thousands of letters from physicians in all parts of the country, reporting cases which otherwise could not have been included in the statistics. There are doubtless thousands of other cases not reported, although chiefly minor injuries. Our thanks are due for the many careful reports which have made these statistics more complete and the figures more reliable. The data are presented in the same manner as heretofore, in order that comparison may be made.

MORE CASES OF TETANUS

There were 150 tetanus cases this year, almost double the record of last year, when 76 cases were reported. This is the largest number since 1903, when there were 415 cases. It is significant to note that the number of blank cartridge wounds correspondingly increased from 816 last year to 1,095 this year, and that the states having the largest numbers of blank cartridge injuries have

215 deaths, an increase of 52 over last year and 57 more than in 1906. Seventeen were killed outright this year by firearms, 16 were killed by explosions of powder, 7 by giant firecrackers, 7 by toy cannon and 7 by various causes, such as blood poisoning, by sky-rockets, chemicals, etc., while 37 were literally burned to death by fire from fireworks, many of which were caused by the so-called "harmless" varieties of fireworks. As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of noise production on or about the Fourth of July have been omitted. Table 4 shows a comparison of the causes of death other than from tetanus for the past five years.

In Table 5 will be found a summary of all injuries, including tetanus, and of all causes, arranged by states. Beneath the totals at the bottom of the table are given the totals for the six previous years in order that comparisons may be made. The grand totals are also given. Table 6 is arranged to show a more ready comparison by states of the total deaths and accidents for the six years.

Pennsylvania holds the blackest record with 986 casualties, New York coming second with 898, followed by Illinois with 547, New Jersey with 488 and Massachusetts with 430. Altogether there were 5,307 accidents this year, or 316 less than last year.

NON-FATAL INJURIES

There were 5,092 non-fatal injuries this year, or 368 less than last year. There were 16 people totally blinded this year, being 5 more than last year, but 9 less than the highest number in 1905. There were 36 who lost one eye each, 41 who lost legs, arms or hands, while 176 persons lost one or more fingers. The giant firecracker holds the first rank as a cause of mutilating wounds and is responsible for the majority of losses of eyes, hands and fingers during the annual celebration of the Fourth. In the awfulness of its destruction, the giant firecracker is equaled in a few instances only by the explosions of home-made cannon. The fact that the wounds made by the giant firecracker are so lacerated and laid open is probably the reason it does not

TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

	Deaths.			Injuries.							Causes of tetanus cases.		Causes of all cases aside from tetanus.				
States.	From tetanus.	From other causes.	Total deaths.	Loss of sight.	Loss of one eye.	Loss of legs, arms or hands.	Loss of fingers, one or more.	Other injuries.	Total non-fatal injuries.	Total persons dead or injured.	Blank cartridge.	All other causes.	Blank cartridge	Firecrackers.	Cannon.	Firearms.	Powder and fireworks.
Alabama	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
Arizona	..	..	..	..	..	..	1	2	3	3	..	..	..	1	1	..	1
Arkansas	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
California	2	1	3	..	2	..	1	83	86	89	1	1	11	33	20	1	22
Colorado	..	1	1	..	..	..	1	16	17	18	..	..	2	4	1	3	8
Connecticut	..	3	3	..	..	..	4	79	83	86	..	..	28	24	14	11	9
Delaware	2	1	3	..	..	..	..	10	10	13	2	..	..	5	..	2	4
Dist. of Columbia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Idaho	1	..	1	..	..	..	..	1	1	2	..	1	..	1	..	..	..
Illinois	15	3	18	2	7	2	14	504	529	547	20	..	168	163	39	44	113
Indiana	9	2	11	..	..	7	2	143	152	163	8	1	35	57	10	10	42
Iowa	1	..	1	..	3	2	2	83	90	91	1	..	7	52	9	1	21
Kansas	6	..	6	..	..	..	1	79	80	86	5	1	30	22	5	4	19
Kentucky	..	1	1	..	..	1	..	15	16	17	1	..	..	3	6	3	4
Louisiana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	1	..	1	..	..	..	1	20	21	22	1	..	2	6	8	1	4
Maryland	1	..	1	..	..	..	..	9	9	10	2	..	1	2	2	1	2
Massachusetts	5	11	16	..	3	1	16	394	414	430	7	1	113	139	24	18	128
Michigan	9	5	14	3	3	3	8	146	163	177	10	1	34	64	16	9	43
Minnesota	..	3	3	..	..	..	..	66	66	69	..	..	3	23	2	3	38
Mississippi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	8	6	14	..	..	..	2	336	338	352	7	1	146	69	30	40	59
Montana	3	..	3	..	..	..	1	5	6	9	3	..	4	2	..	..	..
Nebraska	3	1	4	..	2	1	1	34	38	42	2	1	9	9	1	1	19
Nevada	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Hampshire	1	..	1	..	..	..	..	22	22	23	1	..	3	7	7	1	4
New Jersey	14	7	21	2	3	6	24	432	467	488	15	4	126	131	60	32	120
New Mexico	..	..	..	..	..	..	..	1	1	1	..	..	1	..	..	..	..
New York	11	10	20	2	4	6	41	824	877	898	9	2	139	244	62	88	354
North Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Dakota	..	..	..	..	..	..	..	4	4	4	..	..	..	..	1	..	3
Ohio	10	3	13	..	3	4	11	292	310	323	10	2	65	139	36	16	55
Oklahoma	..	..	..	..	1	..	..	11	12	12	..	..	5	7	..	..	..
Oregon	..	..	..	..	..	..	..	21	21	21	..	..	2	15	3	..	1
Pennsylvania	8	19	27	6	3	5	42	903	959	986	9	1	114	258	49	35	520
Rhode Island	..	3	3	..	..	1	..	38	39	42	..	..	11	8	4	3	16
South Carolina	..	..	..	..	..	..	..	4	4	4	..	..	..	1	..	..	3
South Dakota	1	..	1	..	..	..	..	8	8	9	1	..	3	2	..	1	2
Tennessee	..	..	..	..	..	..	..	4	4	4	..	..	1	1	..	..	2
Texas	..	..	..	..	..	..	..	4	4	4	..	..	1	..	..	2	1
Utah	..	2	2	..	..	..	..	16	16	18	..	..	2	10	..	..	6
Vermont	..	..	..	..	..	..	..	12	12	12	..	..	4	6	1	..	1
Virginia	..	1	1	..	..	..	..	3	3	4	..	..	..	..	..	..	4
Washington	2	1	3	1	1	..	1	26	29	32	4	..	5	17	2	..	4
West Virginia	3	2	5	..	..	2	1	27	30	35	3	1	2	17	6	1	5
Wisconsin	9	4	13	..	1	..	1	142	144	157	7	2	18	70	8	9	43
Wyoming	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	1	..
1909 totals	125	90	215	16	36	41	176	4,823	5,093	5,307	130	20	1,095	1,614	427	341	1,680
1908 totals	55	108	163	11	93	57	184	5,115	5,460	5,623	58	18	816	1,793	399	481	2,058
1907 totals	62	102	164	12	75	57	237	3,868	4,249	4,413	52	21	554	1,489	267	502	1,528
1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,690	408	532	1,822
1905 totals	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	474	404	1,675
1904 totals	91	92	183	19	61	61	208	3,637	3,986	4,169	74	25	931	1,268	508	406	1,056
1903 totals	406	60	466	10	75	54	174	3,670	3,983	4,449	363	29	1,309	1,152	397	236	731
Grand totals	901	630	1,531	115	518	406	1,427	30.606	33.073	34 603	796	187	6.374	10,781	2,880	2,902	10,550

incubation period doubtless indicates a less virulent germ and, therefore, a better chance for recovery by treatment. In one case the symptoms began on the fourth day, while in another case they appeared on the fifteenth. Following the appearance of the symptoms death resulted in from 2 to 9 days, the average of all cases reported this year being about 3½ days. In 4 cases the entire duration of time between inoculation and death was six days or less. The average duration for all fatal cases reported was 10½ days. The list of tetanus cases is given in Table 1.

Tetanus cases occurred in 25 different states, or in 5 more than last year, and the same as in 1906. For the fifth consecutive year Illinois reports the largest number, having 20 cases this year, 12 each in 1908 and 1907, 16 in 1906 and 20 in 1905. In 1903 and 1904 Pennsylvania reported the highest numbers. For the fourth consecutive year New Jersey reports the next highest number, having 19 cases this year, 10 last year, 8 in 1907 and 10 in 1906. Ohio reports 12 cases this year. Michigan and New York each had 11 cases and Pennsylvania 10. Table 2 gives a comparison of the number of cases in each state for the seven years.

TABLE 2.—Comparison with Previous Years

	1903	1904	1905	1906	1907	1908	1909
Alabama	..	..	1	..	..	..	..
Arizona	..	..	..	..	1	..	..
California ...	2	4	4	3	1	..	2
Colorado	4	..	1	..	..	..	..
Connecticut .	3	..	3	..	4	1	..
Delaware	..	..	1	1	1	..	2
Dist. Columbia	1	..	..	..	..	.	..
Florida	..	..	..	..	..	..	1
Georgia	..	..	..	..	1	..	..
Idaho	1	..	..	..	..	..	1
Illinois	49	15	20	16	12	12	20
Indiana	11	6	3	8	2	..	9
Iowa	14	2	3	4	4	1	1
Kansas	11	1	..	..	2	1	6
Kentucky	4	2	..	1	..	1	1
Louisiana ...	..	..	..	..	..	..	..
Maine	2	4	1	1	..	1	1
Maryland ...	1	..	1	1	..	..	2
Massachusetts.	16	5	7	3	2	5	8
Michigan ...	29	7	9	4	4	2	11
Minnesota ...	15	2	2	2	2	..	..
Missouri	29	1	3	3	1	5	8
Montana	2	1	1	..	1	..	3
Nebraska	4	3	3	1	..	1	3
New Hampshire	2	..	..	1	..	..	1
New Jersey ..	8	9	3	10	8	10	19
New York ...	36	9	6	8	4	9	11
North Dakota	..	..	..	..	..	..	..
Ohio	67	9	5	7	6	7	12
Oklahoma ...	1	..	1	1	..	1	..
Oregon	2	.	..	1	1	1	..
Pennsylvania.	82	17	12	5	7	7	10
Rhode Island.	3	..	..	1	..	..	..
South Carolina	..	..	..	..	..	..	..
South Dakota.	..	..	..	..	..	1	1
Tennessee ...	..	..	..	..	..	..	..
Texas	..	..	..	..	2	..	..
Utah	..	1	1	..	..	..	..
Vermont	3	2	..	2	2	..	..
Washington .	2	1	..	..	2	4	4
West Virginia	3	..	..	2	..	1	4
Wisconsin ...	10	4	13	2	3	5	9
Wyoming ...	..	..	..	1	..	..	..
Total ...	415	105	104	89	73	76	150
States having cases	30	21	23	25	23	20	25

TABLE 3.—Causes of Tetanus Cases.

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Firearms.	Powder, etc.	Total
1903............	363	17	5	3	27	415
1904............	74	18	5	1	7	105
1905............	65	17	4	5	13	104
1906............	54	17	1	7	10	89
1907............	52	8	6	4	3	73
1908............	58	5	4	3	6	76
1909............	130	9	1	4	6	150

TABLE 4.—Causes of Deaths Aside From Tetanus

Year.	Gunshot.	Fire from Fireworks.	Powder, Torpedoes, etc.	Giant Crackers.	Cannon.	Other Causes.	Total.
1905....	37	23	6	5	7	17	95
1906....	38	18	18	3	3	3	83
1907....	20	31	13	13	3	22	102
1908....	30	22	19	23	7	7	108
1909....	17	37	16	7	7	6	90

Blank cartridges still continue to be responsible for the great majority of tetanus cases, 130, or 86.5 per cent. of all cases this year, being due to that cause, as compared with 73.3 per cent. last year and 71 per cent. in 1907 and 60 per cent. in 1906. Nine cases this year resulted from giant firecracker injuries, 4 cases from gunshot wounds, 1 case from toy cannon injury and 6 from other forms of fireworks.

Of the 150 cases of tetanus due to Fourth of July injuries this year, 125, or 84 per cent., were reported to have ended fatally, as compared with 72 per cent. of deaths last year, 85 per cent. in 1907 and 84 per cent. in 1906.

TABLE 6.—Total Deaths and Accidents by States During Seven Years

	1903	1904	1905	1906	1907	1908	1909
Alabama	2	7	1	2	1	1	1
Arizona	1	..	4	5	2	5	3
Arkansas	..	..	3	4	..	5	1
California	100	138	142	96	121	136	89
Colorado	39	44	26	23	25	13	18
Connecticut ...	162	133	132	169	63	105	86
Delaware	1	5	14	8	16	12	13
Dist. Columbia.	2	10	24	5	12	21	..
Florida	1	2	2	..	..	..	1
Georgia	..	..	..	4	2	4	..
Idaho	4	4	3	3	4	4	2
Illinois	366	423	542	598	468	558	546
Indiana	160	211	217	250	..	255	164
Iowa	168	137	328	255	231	174	91
Kansas	63	88	56	61	64	72	86
Kentucky	30	72	17	21	18	33	17
Louisiana	..	2	3	7	8	4	..
Maine	31	32	29	15	11	16	22
Maryland	21	22	13	10	23	21	10
Massachusetts..	637	193	467	329	168	430	430
Michigan	144	157	288	193	163	203	177
Minnesota	157	102	174	95	95	65	69
Mississippi ...	..	..	..	2	2	1	..
Missouri	147	84	218	325	299	375	352
Montana	5	17	40	3	6	11	9
Nebraska	46	63	43	47	58	46	42
Nevada	..	1	2	..	1	4	..
New Hampshire	37	23	9	29	13	13	23
New Jersey ...	228	204	350	398	402	472	488
New Mexico...	..	4	5	1	6	..	1
New York.....	522	549	566	681	752	647	807
North Carolina	..	..	1	1	..	..	..
North Dakota..	10	8	29	11	8	13	4
Ohio	443	327	329	490	375	543	323
Oklahoma	1	3	7	14	194	9	12
Oregon	16	13	9	11	5	9	21
Pennsylvania ..	533	744	721	969	491	987	986
Rhode Island..	64	30	11	21	39	39	42
South Carolina	..	..	..	1	..	..	4
South Dakota..	4	10	15	5	8	10	9
Tennessee	4	1	5	6	4	5	4
Texas	2	2	4	11	7	11	4
Utah	23	22	25	18	30	12	18
Vermont	45	14	10	14	18	19	12
Virginia	..	11	5	8	..	5	4
Washington ...	21	25	15	25	23	38	32
West Virginia..	19	16	34	64	27	29	35
Wisconsin	190	215	230	155	150	187	157
Wyoming	1	2	8	3	..	1	1

TETANUS FROM OTHER THAN FOURTH OF JULY INJURIES

Besides the cases of lockjaw due directly to Fourth of July injuries, many other cases were reported this year which occurred during the Fourth of July season, but which were due to penetrating injuries from nails or splinters, to crushing injuries or other causes. There were 128 such cases reported this year, as compared with 166 last year and 94 in 1907. The report of these cases emphasizes the fact that in the treatment of all penetrating wounds the possibility of tetanus should be borne in mind and prophylactic measures employed.

Of the 128 cases of tetanus due to other than Fourth of July injuries, Pennsylvania reported 21, Illinois 18, Ohio 13 and New York 12. Altogether 25 states reported cases, as compared with 28 last year. Table 8 on page 953 shows these cases by states and will be interesting in comparison with Table 2.

DEATHS FROM FIREWORKS, ASIDE FROM TETANUS

Besides the 125 deaths due to tetanus, 90 persons were killed by various forms of fireworks, making a total of

215 deaths, an increase of 52 over last year and 57 more than in 1906. Seventeen were killed outright this year by firearms, 16 were killed by explosions of powder, 7 by giant firecrackers, 7 by toy cannon and 7 by various causes, such as blood poisoning, by sky-rockets, chemicals, etc., while 37 were literally burned to death by fire from fireworks, many of which were caused by the so-called "harmless" varieties of fireworks. As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of noise production on or about the Fourth of July have been omitted. Table 4 shows a comparison of the causes of death other than from tetanus for the past five years.

In Table 5 will be found a summary of all injuries, including tetanus, and of all causes, arranged by states. Beneath the totals at the bottom of the table are given the totals for the six previous years in order that comparisons may be made. The grand totals are also given. Table 6 is arranged to show a more ready comparison by states of the total deaths and accidents for the six years.

Pennsylvania holds the blackest record with 986 casualties, New York coming second with 898, followed by Illinois with 547, New Jersey with 488 and Massachusetts with 430. Altogether there were 5,307 accidents this year, or 316 less than last year.

NON-FATAL INJURIES

There were 5,092 non-fatal injuries this year, or 368 less than last year. There were 16 people totally blinded this year, being 5 more than last year, but 9 less than the highest number in 1905. There were 36 who lost one eye each, 41 who lost legs, arms or hands, while 176 persons lost one or more fingers. The giant firecracker holds the first rank as a cause of mutilating wounds and is responsible for the majority of losses of eyes, hands and fingers during the annual celebration of the Fourth. In the awfulness of its destruction, the giant firecracker is equaled in a few instances only by the explosions of home-made cannon. The fact that the wounds made by the giant firecracker are so lacerated and laid open is probably the reason it does not

TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

	Deaths.			Injuries.							Causes of tetanus cases.		Causes of all cases aside from tetanus.				
States.	From tetanus.	From other causes.	Total deaths.	Loss of sight.	Loss of one eye.	Loss of legs, arms or hands.	Loss of fingers, one or more.	Other injuries.	Total non-fatal injuries.	Total persons dead or injured.	Blank cartridge.	All other causes.	Blank cartridge	Firecrackers.	Cannon.	Firearms.	Powder and fireworks.
Alabama	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
Arizona	..	..	..	..	..	..	1	2	3	3	..	..	..	1	1	..	1
Arkansas	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
California	2	1	3	..	2	..	1	83	86	89	1	1	11	33	20	1	22
Colorado	..	1	1	..	..	..	1	16	17	18	..	..	2	4	1	3	8
Connecticut	..	3	3	..	..	..	4	79	83	86	..	..	28	24	14	11	9
Delaware	2	1	3	..	..	..	..	10	10	13	2	..	..	5	..	2	4
Dist. of Columbia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Idaho	1	..	1	..	..	..	..	1	1	2	..	1	..	1	..	..	..
Illinois	15	3	18	2	7	2	14	504	529	547	20	..	168	163	39	44	113
Indiana	9	2	11	..	..	7	2	143	152	163	8	1	35	57	10	10	42
Iowa	1	..	1	..	3	2	2	83	90	91	1	..	7	52	9	1	21
Kansas	6	..	6	..	..	..	1	79	80	86	5	1	30	22	5	4	19
Kentucky	..	1	1	..	..	1	..	15	16	17	1	..	..	3	6	3	4
Louisiana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	1	..	1	..	..	..	1	20	21	22	1	..	2	6	8	1	4
Maryland	1	..	1	..	..	..	..	9	9	10	2	..	1	2	2	1	2
Massachusetts	5	11	16	..	3	1	16	394	414	430	7	1	113	139	24	18	128
Michigan	9	5	14	3	3	3	8	146	163	177	10	1	34	64	16	9	43
Minnesota	..	3	3	..	..	..	..	66	66	69	..	..	3	23	2	3	38
Mississippi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	8	6	14	..	..	..	2	336	338	352	7	1	146	69	30	40	59
Montana	3	..	3	..	..	..	1	5	6	9	3	..	4	2	..	..	..
Nebraska	3	1	4	..	2	1	1	34	38	42	2	1	9	9	1	1	19
Nevada	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Hampshire	1	..	1	..	..	..	..	22	22	23	1	..	3	7	7	1	4
New Jersey	14	7	21	2	3	6	21	432	467	488	15	4	126	131	60	32	120
New Mexico	..	..	..	..	..	..	..	1	1	1	..	..	1	..	..	..	..
New York	11	10	20	2	4	6	41	824	877	898	9	2	139	244	62	88	354
North Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Dakota	..	..	..	..	..	..	..	4	4	4	..	..	..	..	1	..	3
Ohio	10	3	13	..	3	4	11	292	310	323	10	2	65	139	36	16	55
Oklahoma	..	..	..	..	1	..	..	11	12	12	..	..	5	7	..	..	..
Oregon	..	..	..	..	..	..	..	21	21	21	..	..	2	15	3	..	1
Pennsylvania	8	19	27	6	3	5	42	903	959	986	9	1	114	258	49	35	520
Rhode Island	..	3	3	..	..	1	..	38	39	42	..	..	11	8	4	3	16
South Carolina	..	..	..	..	..	..	..	4	4	4	..	..	..	1	..	..	3
South Dakota	1	..	1	..	..	..	..	8	8	9	1	..	3	2	..	1	2
Tennessee	..	..	..	..	..	..	..	4	4	4	..	..	1	1	..	..	2
Texas	..	..	..	..	..	..	..	4	4	4	..	..	1	..	..	2	1
Utah	..	2	2	..	..	..	..	16	16	18	..	..	2	10	..	..	6
Vermont	..	..	..	..	..	..	..	12	12	12	..	..	4	6	1	..	1
Virginia	..	1	1	..	..	..	..	3	3	4	..	..	..	..	..	..	4
Washington	2	1	3	1	1	..	1	26	29	32	4	..	5	17	2	..	4
West Virginia	3	2	5	..	..	2	1	27	30	35	3	1	2	17	6	1	5
Wisconsin	9	4	13	..	1	.	1	142	144	157	7	2	18	70	8	9	43
Wyoming	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	1	..
1909 totals	125	90	215	16	36	41	176	4,823	5,093	5,307	130	20	1,095	1,614	427	341	1,680
1908 totals	55	108	163	11	93	57	184	5,115	5,460	5,623	58	18	816	1,793	399	481	2,058
1907 totals	62	102	164	12	75	57	237	3,868	4,249	4,413	52	21	554	1,489	267	502	1,528
1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,690	408	532	1,822
1905 totals	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	474	404	1,675
1904 totals	91	92	183	19	61	61	208	3,637	3,986	4,169	74	25	931	1,268	508	406	1,056
1903 totals	406	60	466	10	75	54	174	3,670	3,983	4,449	363	29	1,309	1,152	397	236	731
Grand totals	901	630	1,531	115	518	406	1,427	30,606	33,073	34,603	796	187	6,374	10,781	2,880	2,902	10,550

incubation period doubtless indicates a less virulent germ and, therefore, a better chance for recovery by treatment. In one case the symptoms began on the fourth day, while in another case they appeared on the fifteenth. Following the appearance of the symptoms death resulted in from 2 to 9 days, the average of all cases reported this year being about 3½ days. In 4 cases the entire duration of time between inoculation and death was six days or less. The average duration for all fatal cases reported was 10½ days. The list of tetanus cases is given in Table 1.

Tetanus cases occurred in 25 different states, or in 5 more than last year, and the same as in 1906. For the fifth consecutive year Illinois reports the largest number, having 20 cases this year, 12 each in 1908 and 1907, 16 in 1906 and 20 in 1905. In 1903 and 1904 Pennsylvania reported the highest numbers. For the fourth consecutive year New Jersey reports the next highest number, having 19 cases this year, 10 last year, 8 in 1907 and 10 in 1906. Ohio reports 12 cases this year. Michigan and New York each had 11 cases and Pennsylvania 10. Table 2 gives a comparison of the number of cases in each state for the seven years.

TABLE 2.—COMPARISON WITH PREVIOUS YEARS

	1903	1904	1905	1906	1907	1908	1909
Alabama	..	..	1	..	..	..	..
Arizona	..	..	..	..	1	..	..
California ...	2	4	4	3	1	..	2
Colorado	4	..	1	..	..	..	..
Connecticut .	3	..	3	..	4	1	..
Delaware	..	..	1	1	1	..	2
Dist. Columbia	1	..	..	..	..	..	..
Florida	..	..	..	..	..	..	1
Georgia	..	..	..	..	1	..	..
Idaho	1	..	..	..	..	..	1
Illinois	49	15	20	16	12	12	20
Indiana	11	6	3	8	2	..	9
Iowa	14	2	3	4	4	1	1
Kansas	11	1	..	..	2	1	6
Kentucky	4	2	..	1	..	1	1
Louisiana ...	..	..	..	..	..	..	..
Maine	2	4	1	1	..	1	1
Maryland ...	1	..	1	1	..	..	2
Massachusetts.	16	5	7	3	2	5	8
Michigan ...	29	7	9	4	4	2	11
Minnesota ...	15	2	2	2	2	..	..
Missouri	29	1	3	3	1	5	8
Montana	2	1	1	..	1	..	3
Nebraska	4	3	3	1	..	1	3
New Hampshire	2	..	..	1	..	..	1
New Jersey ..	8	9	3	10	8	10	19
New York ...	36	9	6	8	4	9	11
North Dakota	..	..	..	..	..	..	..
Ohio	67	9	5	7	6	7	12
Oklahoma ...	1	..	1	1	..	1	..
Oregon	2	..	..	1	1	1	..
Pennsylvania.	82	17	12	5	7	7	10
Rhode Island.	3	..	..	1	..	..	..
South Carolina	..	..	..	..	..	..	..
South Dakota.	..	..	..	..	..	1	1
Tennessee ...	..	..	..	..	..	..	..
Texas	..	..	..	..	2	..	..
Utah	..	1	1	..	..	..	..
Vermont	3	2	..	2	2	..	..
Washington .	2	1	..	..	2	4	4
West Virginia	3	..	..	2	..	1	4
Wisconsin ...	10	4	13	2	3	5	9
Wyoming ...	..	..	..	1	..	..	..
Total ...	415	105	104	89	73	76	150
States having cases	30	21	23	25	23	20	25

TABLE 3.—CAUSES OF TETANUS CASES.

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Firearms.	Powder, etc.	Total
1903............	363	17	5	3	27	415
1904............	74	18	5	1	7	105
1905............	65	17	4	5	13	104
1906............	54	17	1	7	10	89
1907............	52	8	6	4	3	73
1908....	58	5	4	3	6	76
1909............	130	9	1	4	6	150

TABLE 4.—CAUSES OF DEATHS ASIDE FROM TETANUS

Year.	Gunshot.	Fire from Fireworks.	Powder, Torpedoes, etc.	Giant Crackers.	Cannon.	Other Causes.	Total.
1905....	37	23	6	5	7	17	95
1906....	38	18	18	3	3	3	83
1907....	20	31	13	13	3	22	102
1908....	30	22	19	23	7	7	108
1909....	17	37	16	7	7	6	90

Blank cartridges still continue to be responsible for the great majority of tetanus cases, 130, or 86.5 per cent. of all cases this year, being due to that cause, as compared with 73.3 per cent. last year and 71 per cent. in 1907 and 60 per cent. in 1906. Nine cases this year resulted from giant firecracker injuries, 4 cases from gunshot wounds, 1 case from toy cannon injury and 6 from other forms of fireworks.

Of the 150 cases of tetanus due to Fourth of July injuries this year, 125, or 84 per cent., were reported to have ended fatally, as compared with 72 per cent. of deaths last year, 85 per cent. in 1907 and 84 per cent. in 1906.

TABLE 6.—TOTAL DEATHS AND ACCIDENTS BY STATES DURING SEVEN YEARS

	1903	1904	1905	1906	1907	1908	1909
Alabama	2	7	1	2	1	1	1
Arizona	1	..	4	5	2	5	3
Arkansas	..	..	3	4	..	5	1
California	100	138	142	96	121	136	89
Colorado	39	44	26	23	25	13	18
Connecticut ...	162	133	132	169	63	105	86
Delaware	1	5	14	8	16	12	13
Dist. Columbia.	2	10	24	5	12	21	..
Florida	1	2	2	..	..	..	1
Georgia	..	..	..	4	2	4	..
Idaho	4	4	3	3	4	4	2
Illinois	366	423	542	598	468	558	546
Indiana	160	211	217	250	..	255	164
Iowa	168	137	328	255	231	174	91
Kansas	63	88	56	61	64	72	86
Kentucky	30	72	17	21	18	33	17
Louisiana	..	2	3	7	8	4	..
Maine	31	32	29	15	11	16	22
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South Dakota..	4	10	15	5	8	10	9
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Wyoming	1	2	8	3	..	1	1

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Besides the cases of lockjaw due directly to Fourth of July injuries, many other cases were reported this year which occurred during the Fourth of July season, but which were due to penetrating injuries from nails or splinters, to crushing injuries or other causes. There were 128 such cases reported this year, as compared with 166 last year and 94 in 1907. The report of these cases emphasizes the fact that in the treatment of all penetrating wounds the possibility of tetanus should be borne in mind and prophylactic measures employed.

Of the 128 cases of tetanus due to other than Fourth of July injuries, Pennsylvania reported 21, Illinois 18, Ohio 13 and New York 12. Altogether 25 states reported cases, as compared with 28 last year. Table 8 on page 953 shows these cases by states and will be interesting in comparison with Table 2.

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215 deaths, an increase of 52 over last year and 57 more than in 1906. Seventeen were killed outright this year by firearms, 16 were killed by explosions of powder, 7 by giant firecrackers, 7 by toy cannon and 7 by various causes, such as blood poisoning, by sky-rockets, chemicals, etc., while 37 were literally burned to death by fire from fireworks, many of which were caused by the so-called "harmless" varieties of fireworks. As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of noise production on or about the Fourth of July have been omitted. Table 4 shows a comparison of the causes of death other than from tetanus for the past five years.

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TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

	Deaths.			Injuries.							Causes of tetanus cases.		Causes of all cases aside from tetanus.				
States.	From tetanus.	From other causes.	Total deaths.	Loss of sight.	Loss of one eye.	Loss of legs, arms or hands.	Loss of fingers, one or more.	Other injuries.	Total non-fatal injuries.	Total persons dead or injured.	Blank cartridge.	All other causes.	Blank cartridge.	Firecrackers.	Cannon.	Firearms.	Powder and fireworks.
Alabama	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
Arizona	..	..	..	..	..	..	1	2	3	3	..	..	..	1	1	..	1
Arkansas	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
California	2	1	3	..	2	..	1	83	86	89	1	1	11	33	20	1	22
Colorado	..	1	1	..	..	..	1	16	17	18	..	..	2	4	1	3	8
Connecticut	..	3	3	..	..	..	4	79	83	86	..	..	28	24	14	11	9
Delaware	2	1	3	..	..	..	..	10	10	13	2	..	..	5	..	2	4
Dist. of Columbia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Idaho	1	..	1	..	..	..	..	1	1	2	..	1	..	1	..	..	..
Illinois	15	3	18	2	7	2	14	504	529	547	20	..	168	163	39	44	113
Indiana	9	2	11	..	..	7	2	143	152	163	8	1	35	57	10	10	42
Iowa	1	..	1	..	3	2	2	83	90	91	1	..	7	52	9	1	21
Kansas	6	..	6	..	..	..	1	79	80	86	5	1	30	22	5	4	19
Kentucky	..	1	1	..	..	1	..	15	16	17	1	..	..	3	6	3	4
Louisiana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	1	..	1	..	..	..	1	20	21	22	1	..	2	6	8	1	4
Maryland	1	..	1	..	..	..	..	9	9	10	2	..	1	2	2	1	2
Massachusetts	5	11	16	..	3	1	16	394	414	430	7	1	113	139	24	18	128
Michigan	9	5	14	3	3	3	8	146	163	177	10	1	34	64	16	9	43
Minnesota	..	3	3	..	..	..	..	66	66	69	..	..	3	23	2	3	38
Mississippi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	8	6	14	..	..	..	2	336	338	352	7	1	146	69	30	40	59
Montana	3	..	3	..	..	..	1	5	6	9	3	..	4	2	..	..	..
Nebraska	3	1	4	..	2	1	1	34	38	42	2	1	9	9	1	1	19
Nevada	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Hampshire	1	..	1	..	..	..	..	22	22	23	1	..	3	7	7	1	4
New Jersey	14	7	21	2	3	6	24	432	467	488	15	4	126	131	60	32	120
New Mexico	..	..	..	..	..	..	..	1	1	1	..	..	1	..	..	..	..
New York	11	10	20	2	4	6	41	824	877	898	9	2	139	244	62	88	354
North Carolina	..	..	..	..	..	..	..	4	4	4	..	..	..	..	1	..	3
North Dakota	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ohio	10	3	13	..	3	4	11	292	310	323	10	2	65	139	36	16	55
Oklahoma	..	..	..	..	1	..	..	11	12	12	..	..	5	7	..	..	..
Oregon	..	..	..	..	..	..	..	21	21	21	..	..	2	15	3	..	1
Pennsylvania	8	19	27	6	3	5	42	903	959	986	9	1	114	258	49	35	520
Rhode Island	..	3	3	..	..	1	..	38	39	42	..	..	11	8	4	3	16
South Carolina	..	..	..	..	..	..	..	4	4	4	..	..	..	1	..	..	3
South Dakota	1	..	1	..	..	..	..	8	8	9	1	..	3	2	..	1	2
Tennessee	..	..	..	..	..	..	..	4	4	4	..	..	1	1	..	..	2
Texas	..	..	..	..	..	..	..	4	4	4	..	..	1	..	..	2	1
Utah	..	2	2	..	..	..	..	16	16	18	..	..	2	10	..	..	6
Vermont	..	..	..	..	..	..	..	12	12	12	..	..	4	6	1	..	1
Virginia	..	1	1	..	..	..	..	3	3	4	..	..	..	..	..	..	4
Washington	2	1	3	1	1	..	1	26	29	32	4	..	5	17	2	..	4
West Virginia	3	2	5	..	..	2	1	27	30	35	3	1	2	17	6	1	5
Wisconsin	9	4	13	..	1	..	1	142	144	157	7	2	18	70	8	9	43
Wyoming	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	1	..
1909 totals	125	90	215	16	36	41	176	4,823	5,093	5,307	130	20	1,095	1,614	427	341	1,680
1908 totals	55	108	163	11	93	57	184	5,115	5,460	5,623	58	18	816	1,793	399	481	2,058
1907 totals	62	102	164	12	75	57	237	3,868	4,249	4,413	52	21	554	1,489	267	502	1,528
1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,690	408	532	1,822
1905 totals	87	95	182	25	106	80	221	4,562	4.994	5,176	65	39	744	1,775	474	404	1,675
1904 totals	91	92	183	19	61	61	208	3,637	3.986	4,169	74	25	931	1,268	508	406	1,056
1903 totals	406	60	466	10	75	54	174	3,670	3.983	4,449	363	29	1,309	1,152	397	236	731
Grand totals	901	630	1.531	115	518	406	1,427	30.606	33.073	34 603	796	187	6.374	10,781	2,880	2.902	10,550

incubation period doubtless indicates a less virulent germ and, therefore, a better chance for recovery by treatment. In one case the symptoms began on the fourth day, while in another case they appeared on the fifteenth. Following the appearance of the symptoms death resulted in from 2 to 9 days, the average of all cases reported this year being about 3½ days. In 4 cases the entire duration of time between inoculation and death was six days or less. The average duration for all fatal cases reported was 10½ days. The list of tetanus cases is given in Table 1.

Tetanus cases occurred in 25 different states, or in 5 more than last year, and the same as in 1906. For the fifth consecutive year Illinois reports the largest number, having 20 cases this year, 12 each in 1908 and 1907, 16 in 1906 and 20 in 1905. In 1903 and 1904 Pennsylvania reported the highest numbers. For the fourth consecutive year New Jersey reports the next highest number, having 19 cases this year, 10 last year, 8 in 1907 and 10 in 1906. Ohio reports 12 cases this year. Michigan and New York each had 11 cases and Pennsylvania 10. Table 2 gives a comparison of the number of cases in each state for the seven years.

TABLE 2.—COMPARISON WITH PREVIOUS YEARS

	1903	1904	1905	1906	1907	1908	1909
Alabama	..	..	1	..	..	..	..
Arizona	..	..	..	..	1	..	..
California ...	2	4	4	3	1	..	2
Colorado	4	..	1	..	..	..	..
Connecticut .	3	..	3	..	4	1	..
Delaware	..	..	1	1	1	..	2
Dist. Columbia	1	..	..	..	..	..	..
Florida	..	..	..	..	..	..	1
Georgia	..	..	..	..	1	..	..
Idaho	1	..	..	..	..	..	1
Illinois	49	15	20	16	12	12	20
Indiana	11	6	3	8	2	..	9
Iowa	14	2	3	4	4	1	1
Kansas	11	1	..	..	2	1	6
Kentucky	4	2	..	1	..	1	1
Louisiana ...	..	..	..	..	..	..	..
Maine	2	4	1	1	..	1	1
Maryland ...	1	..	1	1	..	..	2
Massachusetts.	16	5	7	3	2	5	8
Michigan ...	29	7	9	4	4	2	11
Minnesota ...	15	2	2	2	2	..	..
Missouri	29	1	3	3	1	5	8
Montana	2	1	1	..	1	..	3
Nebraska	4	3	3	1	..	1	3
New Hampshire	2	..	..	1	..	..	1
New Jersey ..	8	9	3	10	8	10	19
New York ...	36	9	6	8	4	9	11
North Dakota	..	..	..	..	..	..	..
Ohio	67	9	5	7	6	7	12
Oklahoma ...	1	..	1	1	..	1	..
Oregon	2	..	..	1	1	1	..
Pennsylvania.	82	17	12	5	7	7	10
Rhode Island.	3	..	..	1	..	..	..
South Carolina	..	..	..	..	..	..	..
South Dakota.	..	..	..	..	..	1	1
Tennessee ...	..	..	..	..	..	..	..
Texas	..	..	..	..	2	..	..
Utah	..	1	1	..	..	..	..
Vermont	3	2	..	2	2	..	..
Washington .	2	1	..	..	2	4	4
West Virginia	3	..	..	2	..	1	4
Wisconsin ...	10	4	13	2	3	5	9
Wyoming ...	..	..	..	1	..	..	..
Total ...	415	105	104	89	73	76	150
States having cases	30	21	23	25	23	20	25

TABLE 3.—CAUSES OF TETANUS CASES.

Year.	Blank Cartridge.	Giant Cracker.	Cannon.	Firearms.	Powder, etc.	Total
1903............	363	17	5	3	27	415
1904............	74	18	5	1	7	105
1905............	65	17	4	5	13	104
1906............	54	17	1	7	10	89
1907............	52	8	6	4	3	73
1908............	58	5	4	3	6	76
1909............	130	9	1	4	6	150

TABLE 4.—CAUSES OF DEATHS ASIDE FROM TETANUS

Year.	Gunshot.	Fire from Fireworks.	Powder. Torpedoes, etc.	Giant Crackers.	Cannon.	Other Causes.	Total.
1905....	37	23	6	5	7	17	95
1906....	38	18	18	3	3	3	83
1907....	20	31	13	13	3	22	102
1908....	30	22	19	23	7	7	108
1909....	17	37	16	7	7	6	90

Blank cartridges still continue to be responsible for the great majority of tetanus cases, 130, or 86.5 per cent. of all cases this year, being due to that cause, as compared with 73.3 per cent. last year and 71 per cent. in 1907 and 60 per cent. in 1906. Nine cases this year resulted from giant firecracker injuries, 4 cases from gunshot wounds, 1 case from toy cannon injury and 6 from other forms of fireworks.

Of the 150 cases of tetanus due to Fourth of July injuries this year, 125, or 84 per cent., were reported to have ended fatally, as compared with 72 per cent. of deaths last year, 85 per cent. in 1907 and 84 per cent. in 1906.

TABLE 6.—TOTAL DEATHS AND ACCIDENTS BY STATES DURING SEVEN YEARS

	1903	1904	1905	1906	1907	1908	1909
Alabama	2	7	1	2	1	1	1
Arizona	1	..	4	5	2	5	3
Arkansas	..	..	3	4	..	5	1
California	100	138	142	96	121	136	89
Colorado	39	44	26	23	25	13	18
Connecticut ...	162	133	132	169	63	105	86
Delaware	1	5	14	8	16	12	13
Dist. Columbia.	2	10	24	5	12	21	..
Florida	1	2	2	..	..	..	1
Georgia	..	..	..	4	2	4	..
Idaho	4	4	3	3	4	4	2
Illinois	366	423	542	598	468	558	546
Indiana	160	211	217	250	..	255	164
Iowa	168	137	328	255	231	174	91
Kansas	63	88	56	61	64	72	86
Kentucky	30	72	17	21	18	33	17
Louisiana	..	2	3	7	8	4	..
Maine	31	32	29	15	11	16	22
Maryland	21	22	13	10	23	21	10
Massachusetts..	637	193	467	329	168	430	430
Michigan	144	157	288	193	163	203	177
Minnesota	157	102	174	95	95	65	69
Mississippi ...	..	..	..	2	2	1	..
Missouri	147	84	218	325	299	375	352
Montana	5	17	40	3	6	11	9
Nebraska	46	63	43	47	58	46	42
Nevada	..	1	2	..	1	4	..
New Hampshire	37	23	9	29	13	13	23
New Jersey ...	228	204	350	398	402	472	488
New Mexico...	..	4	5	1	6	..	1
New York.....	522	549	566	681	752	647	897
North Carolina	..	..	1	1	..	..	..
North Dakota..	10	8	29	11	8	13	4
Ohio	443	327	329	490	375	543	323
Oklahoma	1	3	7	14	194	9	12
Oregon	16	13	9	11	5	9	21
Pennsylvania ..	533	744	721	969	491	987	986
Rhode Island..	64	30	11	21	39	39	42
South Carolina	..	..	..	1	..	..	4
South Dakota..	4	10	15	5	8	10	9
Tennessee	4	1	5	6	4	5	4
Texas	2	2	4	11	7	11	4
Utah	23	22	25	18	30	12	18
Vermont	45	14	10	14	18	19	12
Virginia	..	11	5	8	..	5	4
Washington ...	21	25	15	25	23	38	32
West Virginia..	19	16	34	64	27	29	35
Wisconsin	190	215	230	155	150	187	157
Wyoming	1	2	8	3	..	1	1

TETANUS FROM OTHER THAN FOURTH OF JULY INJURIES

Besides the cases of lockjaw due directly to Fourth of July injuries, many other cases were reported this year which occurred during the Fourth of July season, but which were due to penetrating injuries from nails or splinters, to crushing injuries or other causes. There were 128 such cases reported this year, as compared with 166 last year and 94 in 1907. The report of these cases emphasizes the fact that in the treatment of all penetrating wounds the possibility of tetanus should be borne in mind and prophylactic measures employed.

Of the 128 cases of tetanus due to other than Fourth of July injuries, Pennsylvania reported 21, Illinois 18, Ohio 13 and New York 12. Altogether 25 states reported cases, as compared with 28 last year. Table 8 on page 953 shows these cases by states and will be interesting in comparison with Table 2.

DEATHS FROM FIREWORKS, ASIDE FROM TETANUS

Besides the 125 deaths due to tetanus, 90 persons were killed by various forms of fireworks, making a total of

215 deaths, an increase of 52 over last year and 57 more than in 1906. Seventeen were killed outright this year by firearms, 16 were killed by explosions of powder, 7 by giant firecrackers, 7 by toy cannon and 7 by various causes, such as blood poisoning, by sky-rockets, chemicals, etc., while 37 were literally burned to death by fire from fireworks, many of which were caused by the so-called "harmless" varieties of fireworks. As heretofore, all accidents not directly due to the discharge or handling of fireworks or other means of noise production on or about the Fourth of July have been omitted. Table 4 shows a comparison of the causes of death other than from tetanus for the past five years.

In Table 5 will be found a summary of all injuries, including tetanus, and of all causes, arranged by states. Beneath the totals at the bottom of the table are given the totals for the six previous years in order that comparisons may be made. The grand totals are also given. Table 6 is arranged to show a more ready comparison by states of the total deaths and accidents for the six years.

Pennsylvania holds the blackest record with 986 casualties, New York coming second with 898, followed by Illinois with 547, New Jersey with 488 and Massachusetts with 430. Altogether there were 5,307 accidents this year, or 316 less than last year.

NON-FATAL INJURIES

There were 5,092 non-fatal injuries this year, or 368 less than last year. There were 16 people totally blinded this year, being 5 more than last year, but 9 less than the highest number in 1905. There were 36 who lost one eye each, 41 who lost legs, arms or hands, while 176 persons lost one or more fingers. The giant firecracker holds the first rank as a cause of mutilating wounds and is responsible for the majority of losses of eyes, hands and fingers during the annual celebration of the Fourth. In the awfulness of its destruction, the giant firecracker is equaled in a few instances only by the explosions of home-made cannon. The fact that the wounds made by the giant firecracker are so lacerated and laid open is probably the reason it does not

TABLE 5.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES

	Deaths.			Injuries.							Causes of tetanus cases.		Causes of all cases aside from tetanus.				
States.	From tetanus.	From other causes.	Total deaths.	Loss of sight.	Loss of one eye.	Loss of legs, arms or hands.	Loss of fingers, one or more.	Other injuries.	Total non-fatal injuries.	Total persons dead or injured.	Blank cartridge.	All other causes.	Blank cartridge	Firecrackers.	Cannon.	Firearms.	Powder and fireworks.
Alabama	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
Arizona	..	..	..	..	..	..	1	2	3	3	..	..	..	1	1	..	1
Arkansas	..	..	..	..	..	..	..	1	1	1	..	..	..	1	..	..	..
California	2	1	3	..	2	..	1	83	86	89	1	1	11	33	20	1	22
Colorado	..	1	1	..	..	..	1	16	17	18	..	..	2	4	1	3	8
Connecticut	..	3	3	..	..	..	4	79	83	86	..	..	28	24	14	11	9
Delaware	2	1	3	..	..	..	..	10	10	13	2	..	..	5	..	2	4
Dist. of Columbia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Florida	..	..	..	..	..	..	..	1	1	1	1	..	..	..	..	..	..
Georgia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Idaho	1	..	1	..	..	..	..	1	1	2	..	1	..	1	..	..	..
Illinois	15	3	18	2	7	2	14	504	529	547	20	..	168	163	39	44	113
Indiana	9	2	11	..	..	7	2	143	152	163	8	1	35	57	10	10	42
Iowa	1	..	1	..	3	2	2	83	90	91	1	..	7	52	9	1	21
Kansas	6	..	6	..	..	..	1	79	80	86	5	1	30	22	5	4	19
Kentucky	..	1	1	..	..	1	..	15	16	17	1	..	..	3	6	3	4
Louisiana	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	1	..	1	..	..	..	1	20	21	22	1	..	2	6	8	1	4
Maryland	1	..	1	..	..	..	..	9	9	10	2	..	1	2	2	1	2
Massachusetts	5	11	16	..	3	1	16	394	414	430	7	1	113	139	24	18	128
Michigan	9	5	14	3	3	3	8	146	163	177	10	1	34	64	16	9	43
Minnesota	..	3	3	..	..	..	..	66	66	69	..	..	3	23	2	3	38
Mississippi	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	8	6	14	..	..	..	2	336	338	352	7	1	146	69	30	40	59
Montana	3	..	3	..	..	..	1	5	6	9	3	..	4	2	..	..	..
Nebraska	3	1	4	..	2	1	1	34	38	42	2	1	9	9	1	1	19
Nevada	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Hampshire	1	..	1	..	..	..	..	22	22	23	1	..	3	7	7	1	4
New Jersey	14	7	21	2	3	6	24	432	467	488	15	4	126	131	60	32	120
New Mexico	..	..	..	..	..	..	..	1	1	1	..	..	1	..	..	..	..
New York	11	10	20	2	4	6	41	824	877	898	9	2	139	244	62	88	354
North Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Dakota	..	..	..	..	..	..	..	4	4	4	..	..	..	..	1	..	3
Ohio	10	3	13	..	3	4	11	292	310	323	10	2	65	139	36	16	55
Oklahoma	..	..	..	..	1	..	..	11	12	12	..	..	5	7	..	..	..
Oregon	..	..	..	..	..	..	..	21	21	21	..	..	2	15	3	..	1
Pennsylvania	8	19	27	6	3	5	42	903	959	986	9	1	114	258	49	35	520
Rhode Island	..	3	3	..	..	1	..	38	39	42	..	..	11	8	4	3	16
South Carolina	..	..	..	..	..	..	..	4	4	4	..	..	..	1	..	..	3
South Dakota	1	..	1	..	..	..	..	8	8	9	1	..	3	2	..	1	2
Tennessee	..	..	..	..	..	..	..	4	4	4	..	..	1	1	..	..	2
Texas	..	..	..	..	..	..	..	4	4	4	..	..	1	..	..	2	1
Utah	..	2	2	..	..	..	..	16	16	18	..	..	2	10	..	..	6
Vermont	..	..	..	..	..	..	..	12	12	12	..	..	4	6	1	..	1
Virginia	..	1	1	..	..	..	..	3	3	4	..	..	..	..	..	..	4
Washington	2	1	3	1	1	..	1	26	29	32	4	..	5	17	2	..	4
West Virginia	3	2	5	..	..	2	1	27	30	35	3	1	2	17	6	1	5
Wisconsin	9	4	13	..	1	.	1	142	144	157	7	2	18	70	8	9	43
Wyoming	..	..	..	..	..	..	..	1	1	1	..	..	..	..	..	1	..
1909 totals	125	90	215	16	36	41	176	4,823	5,093	5,307	130	20	1,095	1,614	427	341	1,680
1908 totals	55	108	163	11	93	57	184	5,115	5,460	5,623	58	18	816	1,793	399	481	2,058
1907 totals	62	102	164	12	75	57	237	3,868	4,249	4,413	52	21	554	1,489	267	502	1,528
1906 totals	75	83	158	22	72	56	227	4,931	5,308	5,466	54	35	925	1,690	408	532	1,822
1905 totals	87	95	182	25	106	80	221	4,562	4,994	5,176	65	39	744	1,775	474	404	1,675
1904 totals	91	92	183	19	61	61	208	3,637	3,986	4,169	74	25	931	1,268	508	406	1,056
1903 totals	406	60	466	10	75	54	174	3,670	3,983	4,449	363	29	1,309	1,152	397	236	731
Grand totals	901	630	1,531	115	518	406	1,427	30,606	33,073	34,603	796	187	6,374	10,781	2,880	2,902	10,550

cause more lockjaw. Then, also, these cases are taken to the physician, while the supposedly insignificant wounds made by blank cartridges are neglected. This year 1,614 accidents, including 7 deaths and 9 cases of lockjaw, were due to the giant firecracker.

Firearms caused 341 accidents, including 17 killed and 4 cases of lockjaw. The percentage of deaths was 6.1. Of the total number thus injured, 132 were struck by stray bullets from the reckless shooting of firearms by others and 5 deaths resulted. Toy cannons caused 427 injuries, including 7 killed and one case of tetanus.

TOTALS IN CHIEF CITIES

Table 7 shows the number reported killed and injured in the largest cities during the past three years. The population figures were taken from the U. S. Census Bureau's estimate of 1906. This table will be of special interest from year to year, since it will show the results of the adoption and enforcement of ordinances prohibiting or restricting the use of fireworks. Philadelphia had 9 deaths this year, the largest number reported for any one city, New York had 7 deaths, Boston, Pittsburg and

TABLE 7.—NUMBER REPORTED KILLED AND INJURED IN OUR LARGEST CITIES IN THREE YEARS

City.	Population, Census Bureau Est. 1906.	1907 Killed.	1907 Injured.	1908 Killed.	1908 Injured.	1909 Killed.	1909 Injured.	Totals. Killed.	Totals. Injured.
New York, N. Y.	4,113,043	22	422	11	316	7	559	40	1,297
Chicago, Ill.	2,049,185	16	151	12	202	..	118	28	471
Philadelphia, Pa.	1,441,735	7	248	6	426	9	508	22	1,182
St. Louis, Mo	649,320	3	189	4	229	4	163	11	581
Boston, Mass.	602,278	3	59	6	190	5	167	14	416
Baltimore, Md.	553,669	..	5	1	10	..	5	1	19
Cleveland, O.	460,327	3	63	12	93	..	4	15	160
Buffalo, N. Y.	381,819	..	18	3	11	..	33	3	62
Pittsburg, Pa.	375,082	10	88	..	30	5	48	15	166
San Francisco, Cal	364,667	..	..	..	11	..	12	..	23
Detroit, Mich.	353,563	2	46	..	10	2	46	4	102
Cincinnati, O.	345,230	2	89	1	112	3	86	6	287
Milwaukee, Wis.	317,903	2	93	..	70	..	78	2	241
New Orleans, La	314,146	..	8	..	4	..	..	..	12
Washington, D. C.	307,716	..	12	..	21	..	..	..	33
Newark, N. J.	289,634	1	129	2	81	1	150	4	360
Minneapolis, Minn.	273,825	..	13	..	10	1	24	1	47
Jersey City, N. J	237,952	..	31	5	34	1	14	6	79
Louisville, Ky.	226,129	..	13	..	10	1	10	1	33
Indianapolis, Ind.	219,154	1	31	1	14	1	35	3	80
St. Paul, Minn	203,815	..	20	..	13	..	18	..	51
Providence, R. I	203,243	..	20	1	21	..	13	1	54
Rochester, N. Y	185,703	..	12	..	10	..	5	..	27
Kansas Cty, Mo	182,367	1	46	..	55	4	67	5	168
Toledo, O.	159,980	1	5	..	8	2	3	3	16
Denver, Colo.	151,920	..	8	..	13	..	12	..	33
Columbus, O.	145,414	5	36	..	5	1	19	6	60
Alleghany, Pa.	145,240	..	..	..	..	..	..	..	..
Worcester, Mass.	130,078	1	6	2	20	1	42	4	68
Memphis, Tenn.	125,018	..	1	..	3	..	4	..	8
Omaha, Nebr.	124,167	..	25	..	10	1	17	1	52
New Haven, Conn	121,227	..	2	..	..	..	15	..	17
Syracuse, N. Y.	118,880	..	20	..	14	..	13	..	47
Scranton, Pa.	118,692	..	5	1	17	1	29	2	51
St. Joseph, Mo	118,004	1	23	1	41	1	24	3	88
Paterson, N. J	112,801	1	29	2	31	1	45	4	105
Portland, Ore.	109,884	..	2	..	3	..	16	..	21
Fall River, Mass	105,942	..	..	..	12	..	19	..	31
Atlanta, Ga.	104,984	1	4	..	3	..	..	1	7
Seattle, Wash.	104,169	1	3	..	1	3	10	4	14
Los Angeles, Cal.	102,479	..	35	..	40	..	26	..	101
Dayton, O.	100,799	..	11	..	14	..	4	..	29
Grand Rapids, Mich	99,794	..	20	1	30	..	3	1	53
Cambridge, Mass.	98,544	..	..	..	17	..	..	..	17
Albany, N. Y.	98,537	1	24	..	37	..	31	1	92
Hartford, Conn.	95,882	..	18	..	18	..	11	..	47
Lowell, Mass.	95,173	..	23	..	..	..	18	..	41
Reading, Pa.	91,141	..	17	..	13	..	17	..	47
Richmond, Va.	87,246	..	..	..	..	1	1	1	1
Trenton, N. J.	86,355	..	38	1	17	1	58	2	113
Wilmington, Del.	85,140	1	14	..	13	3	9	4	36
Camden, N J.	84,849	..	16	..	29	4	14	4	59
Nashville, Tenn.	84,703	..	2	..	..	..	..	..	2
Bridgeport, Conn.	84,274	..	1	..	27	..	21	..	49
Lynn, Mass.	78,748	..	3	..	11	3	16	3	30
Des Moines, Ia	78,323	1	31	..	41	..	13	1	85
Kansas City, Kan	77,912	1	10	..	17	..	33	1	60
New Bedford, Mass	76,746	..	..	..	3	..	..	..	3
Troy, N. Y.	76,513	..	..	2	18	..	16	2	34
Springfield, Mass.	75,836	..	21	1	36	1	9	2	66
Oakland, Cal.	73,812	..	9	..	..	..	8	..	17
Lawrence, Mass.	71,548	..	11	1	..	5	22	6	33
Somerville, Mass.	70,798	..	..	..	..	..	1	..	1
Savannah, Ga.	68,596	..	..	..	..	..	..	..	..
Duluth, Minn.	67,337	..	13	..	9	2	10	2	32
Norfolk, Va.	66,931	..	..	..	..	..	..	..	..
Hoboken, N. J.	66,689	..	1	1	24	..	7	1	32
Peoria, Ill.	66,365	..	8	..	27	1	22	1	57
Utica, N. Y.	65,099	..	18	..	10	..	5	..	33
Manchester, N. H.	64,703	..	3	..	1	1	5	1	9
Yonkers, N. Y.	64,110	..	32	..	5	..	8	..	45
Evansville, Ind.	63,957	..	5	..	12	..	6	..	23
San Antonio, Tex.	62,711	..	..	..	1	..	..	..	1
Elizabeth, N. J.	62,185	..	43	..	72	..	37	..	152
Schenectady, N. Y.	61,919	..	4	..	20	..	8	..	32
Waterbury, Conn.	61,903	2	8	..	14	..	5	2	27
Salt Lake City, Utah	61,202	..	15	..	6	2	14	2	35
Wilkesbarre, Pa.	60,121	1	..	3	38	1	15	5	53
Erie, Pa.	59,993	..	..	..	1	..	4	..	5
Houston, Tex.	58,132	..	..	..	1	..	1	..	2
Charleston, S. C.	56,317	..	..	..	..	..	..	..	..
Harrisburg, Pa.	55,735	..	23	1	71	..	22	1	116
Tacoma, Wash.	55,392	2	4	1	3	..	3	3	10
Portland, Me.	55,167	1	2	..	..	..	2	1	4
Totals		94	2,458	83	2,860	80	2,935	257	8,253
Totals Elsewhere		70	1,791	80	2,600	135	2,156	285	6,547
Grand Totals		164	4,249	163	5,460	215	5,091	542	14,800

Lawrence, Mass., each had 5, while 4 each were reported for St. Louis, Kansas City, Mo., and Camden, N. J.

Of non-fatal accidents this year, New York leads with 559, followed by Philadelphia with 508, Boston with 167, St. Louis with 163, Newark with 150, and Chicago with 118.

RESULTS OF RESTRICTIVE LEGISLATION

For several years Baltimore has practically prohibited all forms of fireworks, and the small number of casualties shown in Table 7 are the result. In fact, it has been stated that, even of the few accidents reported, most came from suburbs and outlying districts which were not directly under the city ordinances.

Immediately following last year's celebration, when 12 persons were killed by fireworks, Cleveland passed a prohibitive ordinance, in spite of the protests of fireworks dealers. The wisdom of that legislation is shown by the fact that no deaths were reported this year and only four minor injuries.

Washington, our national capital, has set a splendid example by enforcing a prohibitory ordinance, with the result that this year not a single accident was reported.

Instead of prohibiting all fireworks, Chicago passed a restrictive ordinance limiting the sale of fireworks to a few days preceeding July 5 and limited the size of firecrackers. The use of blank cartridge pistols was strictly forbidden. Comparatively few licenses to sell fireworks were issued, and, according to reports, the ordinance was well enforced. No deaths were reported this year as compared with 12 last year and 16 in 1907. The number of injuries still remains high, although it is a splendid showing compared with Philadelphia, New York and other cities, where very little, if any, restrictive efforts were made. Restrictive ordinances were reported for other cities, but no such marked results were apparent.

WHERE THE RESPONSIBILITY RESTS

The responsibility for the vast majority of deaths and injuries clearly rests with city governments, and this annual carnage could doubtless be prevented without extreme difficulty. Prohibitory ordinances are most effective and permanent, as shown by the results in Baltimore, Washington, San Francisco and Cleveland, and even restrictive ordinances, if strictly enforced, are rather effective, as shown by the results in Toledo, Chicago and other cities. But the enforcement of restrictive measures is more difficult and requires more constant vigilance on the part of the police. By the sound, it is difficult to know whether an explosion is due to a firecracker 3 inches long or to one 5 inches long, or whether it is due to some other forbidden form of fireworks. Under the prohibitory ordinance any explosion would be recognized at once as a violation of the law. Again, the smaller sized firecrackers which have been considered so harmless caused the clothing to catch fire in many of the 37 instances where persons, mostly girls and young children, were burned to death. Even the "harmless" sparkler caused three of these deaths, which were far more agonizing than if caused by gunshot wounds.

The police commissioner of one or our large eastern cities is reported to have openly declared himself in sympathy with the noise, the tumult and the shooting of firecrackers in the celebration of the Fourth of July. When the results of the celebration in that city were known, it was found that 5 lives had been destroyed and 167 persons were injured, some of whom had eyes blown out, hands, fingers and ears torn off, or were otherwise marred for life. Of the 5 who were killed, 2 were shot down and 3 became human torches, burned in order that the people in that city might "warm up and let the world know they were alive!"

With what relief, therefore, we turn to another but somewhat smaller eastern city, Springfield, Mass., which has set a glorious example in the proper celebration of our national birthday and has taken advantage of America's greatest opportunity to develop true patriotism and to bring closer together the various nationalities which make up so large a portion of its population. The Springfield celebration, which meanwhile cost the committee only $3,500 in contributions, has already been so well described[1] that detailed mention is unnecessary.

ANNUAL PREPARATION FOR CASUALTIES

Thousands of dollars are being spent each year in preparation for the casualties of July 4. So extensive has become this preparation that, as some one has pointedly remarked, it resembles the preparation for a great battle. How much more enjoyment would result as well as uplift and profit if the same energy were expended in preparation for more modern methods of celebration!

TABLE 8.—CASES OF TETANUS FROM OTHER CAUSES

	1908.	1909.		1908.	1909.
Alabama	..	..	Nevada	..	..
Arizona	..	..	New Hampshire	..	..
Arkansas	2	..	New Jersey	7	8
California	4	4	New Mexico	..	1
Colorado	3	..	New York	17	12
Connecticut	2	2	North Carolina	1	..
Delaware	2	1	North Dakota	1	..
Dist. of Columbia	..	..	Ohio	23	13
Florida	2	..	Oklahoma	..	..
Georgia	..	1	Oregon	..	1
Idaho	..	..	Pennsylvania	21	21
Illinois	17	18	Rhode Island	..	1
Indiana	6	4	South Carolina	..	..
Iowa	2	7	South Dakota	2	2
Kansas	4	..	Tennessee	3	..
Kentucky	5	5	Texas	4	1
Louisiana	1	..	Utah	..	..
Maine	..	..	Vermont	..	..
Maryland	3	..	Virginia	4	1
Massachusetts	3	5	Washington	2	..
Michigan	4	5	West Virginia	..	1
Minnesota	4	2	Wisconsin	5	4
Mississippi	..	..	Wyoming	..	..
Missouri	12	5			
Montana	..	..	Total	166	128
Nebraska	..	3	States reporting cases	29	25

RADICAL ACTION NEEDED

Our annual sacrifice in the celebration of the Fourth may be compared to the facts related about the Minotaur of old to whom the Greeks were required to sacrifice periodically large numbers of the fair youths and maidens of Athens. America suffers by the comparison, however, since our sacrifice is annual, whereas that of the Athenians was only once in nine years! Radical measures were used then when Theseus slew the Minotaur. Radical measures are needed now and the barbarous Fourth should go. The sentiment favoring the enlightened celebration is rapidly on the increase, but hoodlums require more than coaxing—they must be handled by the police. More restrictions were placed on the use of fireworks this year than ever before. The celebration in many cities was limited to the one day and the sale of fireworks was limited to 2 or 3 days. Many forms of fireworks were prohibited in many cities and zones of quiet were provided for hospitals. And results were obtained, since from all parts of the country come reports that there was never a more quiet and orderly celebration. Although the deaths and injuries are as many as ever, there is nevertheless much to encourage those who are working for truly patriotic methods of celebrating our national independence. They should persevere in their efforts.

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[1] Atlantic Monthly, June, 1909.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 DEARBORN AVENUE . . . CHICAGO, ILL.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 18, 1909

THE ANNUAL FOURTH OF JULY RECORD

In this issue of THE JOURNAL appears the seventh annual compilation of deaths and injuries resulting from the celebration of the Fourth of July. The fact that the celebration was spread over three days this year, since the Fourth came on Sunday, may be partly responsible for the increased number of tetanus cases, the total being nearly double that of last year. Except in a few progressive cities which passed prohibitory or restrictive ordinances, however, there seems to have been a relaxation of authority regarding the use of fireworks, chiefly in Illinois, Massachusetts, New Jersey, New York and Pennsylvania. More serious has been the absence or non-enforcement of restrictions on the use of blank cartridges, which, of course, accounts for the increase of tetanus cases.

Tetanus antitoxin, although extensively used, was still not employed as much as it should have been, either as a preventive measure or after active symptoms began. In several instances, according to report, doctors still resorted to the old methods of treatment long known to be of little value. Several instances were reported also in which doctors did not lay open the wounds until after tetanus had developed, and, therefore, too late to be effective. In some instances the later operation revealed imbedded in the wound the wad which should have been removed at the first treatment. The following simple rules have already had wide circulation, but should be carefully followed in the treatment of every blank cartridge or puncture wound:

TO PREVENT LOCKJAW

1. Freely incise every wound.
2. Carefully and thoroughly remove from the wound every particle of foreign matter.
3. Cauterize the wound thoroughly with a 25 per cent. solution of phenol (carbolic acid).
4. Apply a loose wet boric acid pack.
5. Inject subcutaneously 1500 units of antitetanic serum.
6. In no case should the wound be closed. It should be allowed to heal by granulation. The dressing and packing should be removed every day.

Although the numbers of dead and of injured are larger than or as large as last year, there is, nevertheless, abundant evidence of an increasing public sentiment in favor of more rational methods of celebration. Two more cities, Washington and Cleveland, passed and enforced prohibitory ordinances, and Chicago enforced a restrictive ordinance, with the result that no casualties were reported for Washington, only four slight injuries for Cleveland, and less than half the usual number of accidents and no deaths for Chicago. These results show that prohibitive measures are more effective than mere restrictive ordinances, although restrictive measures are much better than doing nothing.

Efforts to provide safe amusements have been more extensive this year than ever before. Worthy of special mention is the plan adopted by Springfield, Mass., which shows the great opportunity offered by the annual celebration of the Fourth of July to instill in the minds of the youth of our land a spirit of genuine patriotism. The parades, the floats representing historical incidents, the picnics, and, last but not least, the annual chorus drill under skilled leaders in preparation for the mass singing of national airs and popular songs—all these methods, if more extensively employed, would add greatly to the value of the Fourth-of-July celebration in our national life, and help to do away with the present death-dealing methods of celebration. Those who are working toward better methods have reason for encouragement and should persevere. City authorities should assist by prohibiting fireworks. The only objections seem to come from the "business interests" involved. By the combination, therefore, of substitution and restriction, a more enlightened celebration of our national Independence Day will be assured.

STILL TEMPORIZING WITH THE BLANK CARTRIDGE PISTOL

Blank cartridge wounds cause more deaths in the annual celebration of the Fourth of July than all other factors combined. In seven years, 794 deaths have been caused by this one factor! Most of the victims were bright active boys, aged from 6 to 18 years, and they were doomed to die the most awful death known to medical science, a death the agony of which is probably not paralleled even by the tortures of the Inquisition. If this annual sacrifice were really necessary, it would be far more merciful to pick out the hundred or more youths each year and deliberately shoot them. But this annual outrage is not necessary; it is entirely preventable, and the prevention rests with our city governments.

For seven years THE JOURNAL has heralded these facts to the world. They have been given even wider publicity by some of our public-spirited newspapers. During the past two or three years the public press generally has taken up the cry, and now no one can plead ignorance of the awful facts. Nevertheless, the average city government still views with the blind eye of callous indifference the fatalities for which it is morally responsible. Some cities have, indeed, passed prohibitory ordinances, but have not enforced them vigorously. To permit the use of blank cartridges and blank cartridge pistols in the celebration of the Fourth of July is abso lutely criminal. The city council which fails to pass and to enforce ordinances prohibiting the use of these instruments of torture will hereafter be open to the charge of criminal negligence. The plea of ignorance is no longer good; to temporize further regarding the sale and use of blank cartridges and blank cartridge pistols is to aid and abet torture and murder.

These are strong words; but to use mild ones would be to trifle with the anguish and horror in scores of homes—a horror and anguish but faintly reflected in the appalling statistics on the subject. The only effective way to deal with the murderous blank cartridge pistol is to pass and to enforce an absolutely prohibitive ordinance in each city. No more temporizing should be tolerated. The agonizing deaths from this cause should cease.

THE VALUE OF TETANUS ANTITOXIN

Among the reports of the cases of tetanus that we have received we have frequently found the statement that tetanus antitoxin was not used because "the doctor said" that it "was useless," or "of doubtful value," or "in an experimental stage." Therefore, although we have been to some pains at several times to set forth the exact status of tetanus antitoxin according to the best available evidence, it would seem worth while again to discuss the subject while it is so acutely before us as it now is. To put the matter in a nutshell, it may be stated dogmatically that the value of tetanus antitoxin as a prophylactic agent is very great, and its efficiency nearly absolute; as a curative agent it is by no means worthless, and undoubtedly it saves not a few lives when properly used. Apparently, to judge from the reports at hand, many physicians have not yet learned to distinguish between the results obtained by the prophylactic use and by the curative use of tetanus antitoxin; the usual futility of the latter has been incorrectly assumed to apply to the former.

The example of using tetanus antitoxin for preventive purposes was first furnished by the veterinarians, who have to contend with tetanus much more commonly than we. Knowing that in certain stables the horses which received wounds were very likely to develop tetanus, they found it desirable to try to prevent this serious complication by injecting antitoxin into all horses that had received wounds. The results that they obtained were from the first so striking that now antitoxin prophylaxis is invariably used to prevent endemic and epidemic outbreaks of tetanus in horses. For example, in one stable in which from six to eight cases of tetanus developed yearly, it was decided to give every horse with wounds about the feet a prophylactic dose of antitoxin; during the following five years three hundred horses were so treated without a single case of tetanus, although one horse which received no antitoxin developed the disease.[1] Vaillard[2] says that in a series of 13,124 prophylactic injections in horses not one contracted tetanus. In man it is not so easy to estimate the results of tetanus prophylaxis, for, outside of Fourth-of-July tetanus, we do not often get a chance to observe this disease in epidemic proportions, but such evidence as we have is almost equally favorable. Suter[3] has collected 700 cases in which but one light attack of tetanus was observed among all the patients given antitoxin. In France, where this practice seems to have been especially general, there have been a few cases of tetanus in spite of prophylactic injection, but the entire evidence is emphatically in favor of the value of this procedure; indeed, Vaillard claims that in only five cases in the literature to 1908 can the antitoxin prophylaxis be considered a complete failure. The Society of Surgery of Paris recently reported that in a group of Paris hospitals there had occurred in the last seven years but eleven cases of tetanus, all of which were in persons who by some mischance had not received the customary preventive dose of antitetanus serum, which is the routine practice there after a street accident. Kocher went so far as to say before the German Surgical Society that he would consider any physician entitled to reproof who failed to use this measure in a case of injury with contamination of the wound by street dirt.

In this country, the prophylactic treatment of Fourth-of-July injuries has been, so far as we can learn, invariably successful, and our annual mortality list from "patriotic" tetanus has occurred because of the lack of this measure in the cases of the victims. It is to be expected that a few cases may occur in spite of antitoxin, especially when it is given several days after the injury is received, because by this time the disease may be well advanced and the blood loaded with tetanus toxins, even several days before the appearance of symptoms.[4] But even in these cases the prognosis will be much better if the antitoxin is given before rather than after the symptoms have developed.

To neglect to use antitoxin as a curative agent is also unwarranted in the light of our present knowledge, even although the results are by no means so striking as with diphtheria antitoxin. There is no question that more of these patients recover with antitoxin than without, even if the number is not great. Especially efficacious seems to be the intraspinal route of administration, for by this means the antitoxin is brought into close contact with the place where it is most needed, and it is well known that antibodies injected subcutaneously or into the blood directly do not find their way into the cerebrospinal fluid in large amounts. Clinical results support this theorization, and Hoffmann[5] reports a series of thirteen cases with 58 per cent. mortality in which the antitoxin was given subcutaneously, whereas of sixteen patients given intradural injections only two died, and these from complications. Undoubtedly some of the earlier disappointments with antitoxin prophylaxis and treatment were the result of the uncertain activity of the antitoxin preparations then on the market, a defect which has been remedied in this country by the system of standardization developed by the Hygienic Laboratory of the Public Health and Marine-Hospital Service.

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[1] Wells, H. G.: Medical News, June 1, 1901.
[2] Bull. Acad. Méd., Paris, 1908, lxxii, 581.

[3] Arch. klin. Chir., 1904, lxxv. 113; Beitr. klin. Chir., 1907, lii, 671.
[4] Madsen: Centralbl. f. Bakteriol., 1908, xl, No. 3.
[5] Beitr. klin. Chir., 1907, lv.

TUBERCLE BACILLI IN THE BLOOD

Not long ago Rosenberger of Philadelphia came forward with the startling claim that tubercle bacilli are present in the circulating blood even in cases of chronic and localized tuberculosis. The claim was based on the actual demonstration of acid-proof bacilli, which Rosenberger interpreted to be tubercle bacilli, in smears made of centrifugally sedimented blood corpuscles in suspensions of blood in citrate solution. The blood was drawn from a vein at the elbow. Thick smears were used, and after drying the red corpuscles were laked with water.

In view of the practically uniform failure of previous efforts, whether by staining methods or by inoculation in guinea-pigs, to demonstrate tubercle bacilli in the blood in cases of acute and severe febrile tuberculosis, Rosenberger's results were not accepted without reservation. What would the results of other observers, using the same methods as Rosenberger, show? The matter is not settled, but the results already at hand indicate that there are great difficulties in the way of a general acceptance of Rosenberger's "discovery," "the most important and far-reaching discovery as to tuberculosis since Koch's own discovery of the bacillus 27 years ago," according to an enthusiastic writer. In the first place competent observers, notably Ravenel and Smith, record entirely negative results of their study of the blood in cases of tuberculosis according to Rosenberger's method. Burnham and Lyons also failed.[1] Here may be mentioned, too, that Schroeder and Cotton[2] failed to find any bacilli in the blood in 42 tuberculous cattle, and the negative outcome of their microscopic work is strengthened by the failure of tuberculosis to develop in any of the guinea-pigs inoculated with the blood they examined.

In the second place, Brem, by a painstaking investigation reported with much detail,[3] shows that the occurrence of acid- and alcohol-resistant rods in water may lead to the gravest error in such examinations as the one now under discussion unless particular care is taken to exclude contamination of the specimens from the water and the solutions used. Inasmuch as adequate regard probably has not been paid to this point in the past, Brem's advice to exercise great care in all examinations for tubercle bacilli is eminently timely. The failure of observers to corroborate Rosenberger's findings, on the one hand, and, on the other, the possibility that bacilli regarded as tubercle bacilli may have been introduced accidentally, warrant the conclusion that as yet we have no decisive proof of the frequent and continued presence of tubercle bacilli in the blood in ordinary cases of tuberculosis.

INJUSTICE TO THE TUBERCULOUS BY SENDING THEM WEST

We have many times commented on the heartlessness shown in sending to the West and Southwest patients who are in the terminal stage of tuberculosis or even curable patients who are without adequate means. The National Association for the Study and Prevention of Tuberculosis has looked into this practice and has reached the conclusion that over 7,000 persons hopelessly ill with consumption go or are sent annually to the states of California, Arizona, New Mexico, Texas and Colorado. The association asserts, further, that "at least 50 per cent. of those who go to the Southwest every year for their health are so far advanced in their disease that they can not hope for a cure in any climate, under any circumstances." The financial condition of these incurables is such that 60 per cent. of them "have not sufficient means to provide for the proper necessaries of life." This means that over four thousand consumptives either have death hastened by lack of good food and medical attention or else that they are forced to accept charitable relief. Various municipalities and organizations in the West and Southwest have protested; and we think that their protests have been exceedingly moderate under the circumstances. It behooves physicians, nurses, officials, and the public in general to understand the situation and to use every influence to prevent this gross abuse.

Medical News

ILLINOIS

Personal.—Dr. Spencer S. Fuller, Paxton, has returned from Europe.——Dr. James L. Greene, formerly superintendent of the Kankakee State Hospital for the Insane, has taken the oath of office as alienist of the State Board of Control of State Institutions, and will reside in Springfield.——Dr. Elva A. Wright, Lake Forest, is at present in Edinburgh and will return to the United States late in October.

Medical Colleges Not Recognized.—At the semi-annual meeting, June 29, the State Board of Health declared the St. Louis College of Physicians and Surgeons a medical institution not in "good standing," to date from July 1, 1909, conditioned Barnes University, St. Louis, and declined to restore recognition to the National Medical University of Chicago, which had been declared not in "good standing" a few months before.

INDIANA

Personal.—Dr. Omer H. Stewart has been appointed pension examining surgeon at Huntington, vice Dr. L. B. Johnson, resigned.——Dr. W. Marshall Varble has been given a license for the establishment of a maternity branch of the Jeffersonville Hospital.

Licenses Cancelled.—The licenses of Drs. Willis Farrel, Lee M. Farney, Burnhard J. Kowenstrot, Fort Wayne, are said to have been revoked, August 11, by the State Board of Medical Examination and Registration, on the ground that the holders advertised to defraud the public.

Sanitary Convention.—On September 7 and 8, the State Board of Health held at the State House, Indianapolis, its second annual convention of market milk men, butter makers, wholesale dealers in milk, milk inspectors, health officers, and all others interested in the production and distribution of sanitary milk. Among the chief questions considered were the production of clean and wholesome milk; manufacture of butter to meet state and federal requirements; state laws affecting dairy interests, and city ordinances regulating the sale of milk;

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[1] THE JOURNAL, Aug. 28, 1909, p. 731.

[2] Arch. Int. Med., 1909, iv, 133.

[3] This issue of THE JOURNAL.

bovine tuberculosis; the tuberculin test; proper construction of dairy barns; methods of refrigeration, relative cost of production of clean and unclean milk, and the necessity for coöperation between health officers, milk inspectors, etc.

KENTUCKY

Antituberculosis Conference.—The State Antituberculosis Conference will be held in Lexington, September 29 and 30. At this conference it is expected that a state organization will be formed, and that arrangements will be made for concerted action in combating the disease throughout the state.

School Inspection.—Medical inspection of the children of all public schools of Louisville has been inaugurated. Drs. Florence Brandeis, Henry H. Duke and Siegel C. Frankel are the inspectors appointed by the city health officer. Examinations are made of school buildings and premises, heating and ventilation, drinking-water, toilet rooms, cellars and playgrounds. In case of contagious diseases, the patients will be sent home immediately, the schools dismissed and the rooms fumigated. After scarlet fever, not less than 28 days may elapse before the pupil may return to school; after diphtheria, ten days must elapse after the membrane has disappeared, and those exposed to diphtheria are excluded for one week after the time of the last exposure. Patients with whooping cough are not allowed to return to school until after the spasmodic stage has passed. A limit of ten days is placed in chickenpox and two weeks in cases of roetheln. Clinical evidence alone is sufficient to exclude for tonsillitis, and children with pediculosis, ringworm, scabies and impetigo contagiosa are excluded from school until cured.

LOUISIANA

Tulane Alumni at Mississippi Valley Meeting.—Tulane University has arranged for a meeting of its alumni at the time of the meeting of the Mississippi Valley Medical Association, in St. Louis, October 12-14. A committee of resident alumni, composed of Drs. Henry J. Scherck, Harry McC. Johnson, Robert C. Atkinson and R. C. Finley have arranged to conduct a central registration bureau where alumni may register, giving home address and stopping place in St. Louis. A banquet is also to be arranged. The committee offers to furnish information regarding hotels, clinics and other matters.

Personal.—Dr. Stephen W. Stafford, New Orleans, has returned from abroad.——Dr. Henry L. Lazar, Kentwood, was obliged in self-defense to kill a negro who resisted arrest, August 22.—Dr. Cyriac J. Gremillion has been elected president of the board of health of Alexandria.——Dr. A. A. Forsythe, mayor of Monroe, was shot in the leg by an insane negro, August 24.——Dr. Louis M. Thomason has been made president of the board of health of Mandeville.——Dr. Thomas A. Roy, Mansura, has been appointed a member of the State Board of Health, vice Dr. Sidney D. Porter, Moreauville, elected chief medical inspector to succeed Dr. C. Milo Brady, New Orleans.

MARYLAND

Medical Men Candidates.—The following members of the medical profession of the state are announced as candidates for office: For the senate, Dr. Leonard E. Beach, Baltimore, and Dr. W. C. R. Miller, Mason and Dixon, and for the house of delegates, Dr. Thomas A. Ashby, Baltimore.

Address on Tuberculosis.—Brigadier General George M. Sternberg, U. S. Army, retired, delivered an address on "Tuberculosis" before the annual institute of public school teachers of Montgomery county, at Rockville, September 8, in the interest of the Social Service League. In the address, he strongly endorsed the proposal to establish on the almshouse farm, near Rockville, a tent sanatorium for indigent tuberculosis patients.

Baltimore

Personal.—Drs. Thomas S. Cullen and Harry Friedenwald have returned from Europe.——Dr. Benjamin Frayser has been appointed resident physician of the Pottsville (Pa.) Hospital.

Not Pellagra, Rheumatism.—Announcement has been made that the supposed case of pellagra at Johns Hopkins Hospital was not pellagra, but rheumatism. It was considered suspicious, as the patient had just returned from Costa Rica.

Steamer Has Clean Bill of Health.—The steamer *Andyk* from Rotterdam, over whose expected arrival there was so much apprehension as regards cholera, arrived in Baltimore, September 8, after detention of one day in quarantine. She presented a clean bill of health.

Failed to Report.—The assistant health commissioner has ascertained that hospitals have been failing to report many cases of typhoid fever, and on calling attention to this matter 135 cases were reported last week. These, however included many cases treated, but not previously reported for the preceding four months. He also finds that less than one-half of the births of the city are reported. The law requires such reports on penalty of a fine of $10 for each violation.

MISSOURI

Outdoor Lectures on Tuberculosis.—During August, there were delivered under the auspices of the Municipal Commission on Tuberculosis, St. Louis, twelve outdoor lectures in various parts of the city.

Personal.—Dr. George C. Willson, superintendent of State Hospital No. 3, Nevada, has resigned.——Dr. Robert L. Mount, Polo, has been appointed examining physician for Caldwell county for the State Tuberculosis Sanatorium.——Dr. Frank B. Hiller, secretary of the State Board of Health, has opened official headquarters at Jefferson City.——Dr. H. Hays Bullard, of the University of Missouri, has been made instructor in anatomy in Tulane University, New Orleans.

NEW YORK

State Hospitals.—The State Lunacy Commission, which directs the administration of thirteen state hospitals for the insane, with about 35,500 patients and employés, is receiving requisitions for supplies for the next three months. The purchases will aggregate 12,000,000 pounds of foodstuffs, with an approximate cost of $450,000.

Vital Statistics.—There were 11,199 deaths reported in July, or 675 fewer than for July, 1908, equivalent to a death rate of 15.4 per 1,000. During the same period 17,530 births were reported. The mortality from diarrhea and enteritis was 1,470, or 707 fewer than for July, 1908; the deaths from typhoid fever were 112, or 27 fewer than for July, 1908, but the mortality from measles was 126, as compared with 67 in the corresponding month of last year. Chief among death causes were tuberculosis, 1,126; violence, 913, of which 145 were suicides; nephritis, 682; cancer, 598; and pneumonia, 340.

New York City

Off for Europe.—Dr. and Mrs. Alfred W. Pollok and Dr. Henry A. Cassebeer sailed for Europe September 11.

Osteopaths Cannot Issue Death Certificates.—Justice Crane of the Supreme Court holds that osteopaths cannot issue death certificates, and has denied an injunction to compel the city authorities to grant such a privilege.

Campaign Against Tuberculosis.—Exhibits and phonograph lectures on tuberculosis are being continued in different parts of this city. The attendance has been large. At Seventh avenue and Forty-third street the daily attendance is about 4,000, a splendid showing for this neighborhood. For the week ending September 4, there were 536 cases of tuberculosis, with 142 deaths.

Typhoid Increasing.—For the week ended September 4, there were 181 cases of typhoid fever reported, with 11 deaths, a rather larger number than usual so early in the fall. Most of these cases have occurred in the congested tenement districts. Whatever contamination there is in our water comes from the watersheds. For the week ended August 28, there were 158 cases, with 14 deaths; for the week ended August 21, there were but 74 cases, with 15 deaths.

Buffalo

New Hospital Needed.—Plans for the repair of buildings of Erie County Hospital have been submitted to the supervisors, and the cost of the proposed repairs is $179,650. It is believed that the supervisors will see the uselessness of attempting to repair the old buildings at such a cost, and will provide new buildings to accommodate 500 patients.

Temporary Isolation Hospital.—On September 2 there were still 24 cases of scarlet fever in the temporary isolation hospital. Since the opening of the hospital in February, 300 patients have been treated. In connection with the board of health, a committee from the Buffalo Academy of Medicine and the Erie County Medical Society urged the authorities to hasten the selection of a site on which to erect the Municipal Hospital for Acute Contagious Diseases. The present structure is an old schoolhouse which was condemned for school purposes because of insanitary conditions.

OHIO

Physicians and Veterinarians Meet.—The Ohio Society of Comparative Medicine held its annual meeting in Upper Sandusky, August 24 and 25, and elected the following officers: President, Dr. G. W. Cliffe, Upper Sandusky; vice-president, Dr. W. A. Axby, Cincinnati; and secretary, Dr. F. F. Sheets, Van Wert.

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FOREIGN

Austregesilo Made Professor of Clinical Medicine at Rio.—The university at Rio de Janeiro has called to the chair of clinical medicine the local clinician and alienist, A. Austregesilo, a translation of whose work on "Mental Disorders in Ankylostomiasis" was published in the February *Alienist and Neurologist*. After the ceremony of installation the young professor found an automobile awaiting him outside, a present from his clients and other friends.

British Association for the Advancement of Science.—The seventy-ninth annual meeting of the British Association for the Advancement of Science met at Winnipeg, August 25-September 1, under the presidency of Sir J. J. Thompson, professor of experimental physics in the University of Cambridge. This makes the fourth time that this association has held its annual meeting outside of the British Isles; it met in Montreal in 1884, in Toronto in 1897, and in South Africa in 1905. At the opening meeting, Major McMahon read a letter from the retiring president, Francis Darwin, who was unable to be present. The association was welcomed to Winnipeg by the mayor of the city. The president-elect, Sir Joseph J. Thompson, delivered his inaugural address, which dealt with educational matters. The section meetings began on August 26. Saturday, August 28, was devoted to excursions and sightseeing. A special feature of the meeting was the establishment of a subsection devoted to agriculture. The total number attending was about 1,400, only about half the maximum number; yet this is a larger number than attended the Toronto meeting. The next annual meeting will be in Sheffield, England, Aug. 31 to Sept. 7, 1910, under the presidency of Rev. T. G. Bonney, D.Sc., LL.D., F.R.S., emeritus professor of geology, University College, London. According to custom, the officers of the sections will be appointed by the council about Christmas. Prof. John Perry, F.R.S., the general treasurer, and Major P. A. MacMahon, F.R.S., and Prof. W. A. Herdman, F.R.S., the general secretaries, were re-elected.

Death of Dr. Haffter of Switzerland.—The medical profession in Switzerland has sustained a severe loss in the death of Dr. Elias Haffter, editor-in-chief of the *Correspondenz-Blatt für Schweizer Aerzte*, president of the commission that accomplished the reorganization of the profession in Switzerland, and leader in the campaign against tuberculosis and in other branches of social medicine. He held a prominent position in the army, but resigned when his town, Frauenfeld, built a hospital and placed it in his charge. Besides a number of scientific literary contributions, his record of a trip around the world ran into several editions, and he organized and was president of an oratorio society. In commenting on Haffter's well-rounded life, the present editor of the *Correspondenz-Blatt* remarks: "No one can realize what it means to be the editor of a medical journal unless he has been one. All kinds of pleas and demands come to him; he has to restrain the impatience of contributors who want to see their works hurried into print and tranquilize others whose works have to be rejected for lack of space or other reason; he has to read all the manuscripts sent in and go over them with the blue pencil, verify corrections, etc., and, last but not least, he has to be a sort of universal information bureau, responding to inquiries in regard to assistants, etc., the best place to buy instruments, the solution of perplexing questions of professional ethics, etc." Haffter undertook this task for the *Correspondenz-Blatt* when Garrè laid it down to remove to Germany, and carried it on for twenty years, notwithstanding that his health was undermined by three severe attacks of pyemia, professionally acquired, the last proving fatal at the age of 58. He is cited as the embodiment of the ideal conception of the medical profession and of the happiness it brings when thus conceived. "Nothing more beautiful, nothing nobler," he used to say, "than our profession! The true physician is the exponent in the highest degree of the Golden Rule, but Sympathy alone is blind; Conscience and Science supply the eyes."

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Sept. 4, 1909.

Entomologic Research in Africa

In view of the intimate relations between certain insects and the propagation of diseases in man and animals in tropical Africa and of the similar relations between insects and plants having an economic value which is becoming more evident as settlement in that continent progresses, the secretary for the colonies, Lord Crewe, has appointed a scientific committee to study economic entomology with special reference to Africa. This body will be known as the African Entomological Research Committee and includes most of those who are eminent in tropical medical and allied science—Mr. E. Austen of the Natural History Museum, Dr. A. G. Bagshawe, director of the Sleeping Sickness Bureau, Col. Sir David Bruce, Dr. S. F. Harmer, keeper of zoology of the British Museum, Dr. R. S. Macdougall, entomologic adviser of the board of agriculture, Sir John Macfadyean of the Royal Veterinary College, Sir Patrick Manson, Professor Nuttall, and Dr. A. E. Shipley. Arrangements are being made to despatch a trained entomologist to the east side of tropical Africa and another to the west, in order to stimulate official and other residents to collect and observe noxious insects and to instruct them in scientific methods. By this means it is hoped to obtain throughout these territories an organized body of investigators who will send their collections and observations to the committee. These collections will be classified by a number of British and, in some instances, continental entomologists, and named specimens will be distributed to such institutions as may require them for purposes of instruction, both at home and in Africa. The committee also will keep in touch with the work which is being done in this branch in Egypt, the Sudan and South Africa, and the results will be published from time to time in a journal or bulletin.

Vaccine Therapy and Immunization

Vaccine therapy has now assumed great importance in the eyes not only of the profession but of the public. Two hospitals, St. Mary's and the Mount Vernon Hospital for Consumption, have issued appeals for special funds for its study and practice. These funds will be devoted to the maintenance of laboratories and laboratory workers and also to the support of wards in which the treatment will be conducted under the most favorable conditions. At St. Mary's Hospital the new department for therapeutic inoculation has been established in a special wing under the direction of Sir Almroth Wright, the pioneer of the modern development of the method. Here it has been most extensively used in the treatment of localized tuberculosis and the results have been excellent.

At the Mount Vernon Hospital the department is under the direction of Dr. R. W. Allen whose attention has been principally directed to affording protection against catarrh and influenza. He is applying the method to the forms of tuberculosis of the lung which are confined to a limited area. At St. Mary's Hospital the new department is controlled and financed by a special committee which is independent of that of the hospital and which contains many philanthropists who have guaranteed large subscriptions for a period of seven years. Thus Sir Ernest Cassel gives $5,000 a year, Mr. William Bonn $2,500, and Lord Justice Moulton $1,250.

Physical Exercises in Elementary Schools

Only recently have the education authorities recognized that physical health lies at the basis of education and that the object should be to develop a sound mind in a sound body. Formerly simply mental instruction was provided and no attention was paid to the health and very little to the physical development of the child. An important memorandum has

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Philadelphia

Personal.—Dr. Frederick Warren Smith, medical inspector of the bureau of health, left last week for Vienna.——Dr. Elizabeth C. Spencer has been elected resident physician of the female department of the State Hospital for the Insane, Norristown, vice Dr. Mary Wolf, resigned.

Degeneracy Due to Tenement Evils.—A definite movement to provide sanitary conditions for inhabitants in the tenement districts in Philadelphia was made recently by the director of health and charities. An arraignment of the city's neglect of its poor was made by the secretary of the Children's Aid Society, who stated that these overcrowded, badly ventilated and undrained districts are breeding degeneracy and producing a race of subnormal, defective children. The central idea of the conference was to focus attention on the crying need of improvement to determine the chief sources of squalor and disease and to direct attention to the need of legislation to correct these conditions, which increase the death rate by producing tuberculosis, pneumonia and bronchitis. A comparison was made between old, densely populated sections in which the element of bad drainage and poor ventilation largely enters, and the newer sections where model houses have been erected with proper light, ventilation and drainage. It was found that in the former the total death rate during 1908 per 1,000 was 21.53, of which 8.50 were caused by diseases attributed to bad housing conditions, while in the latter the death rate per 1,000 was 8.24, of which 2.50 were from these same causes. In the former, infant mortality was 400 per cent. greater. In outlining a plan of action to overcome these evils, it was suggested that a commission be established, the work of which includes the appointment of committees to examine existing laws and conditions and seek the cooperation of all social organizations in bringing about the enactment of the following laws: An act requiring all premises to be underdrained and making all privy vaults a nuisance; an act extending the provisions of tenement-house laws to lodging houses and rear dwellings; an act requiring the removal of insanitary dwellings and the abandonment for dwelling purposes of insufficiently lighted and ventilated buildings; an ordinance requiring all garbage to be placed in metal-covered receptacles.

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GENERAL NEWS AND COMMENT

Obstetricians and Gynecologists Meet.—The annual meeting of the American Association of Obstetricians and Gynecologists will be held at Fort Wayne, Ind., September 21-23. By an error the wrong date of the meeting has been appearing in The Journal in the list of national societies, which appears monthly. Evidently no officer or member of the association noticed the error, as we were not notified of the mistake till a few days ago. As we are dependent on officers of societies for information concerning names of officers and dates of meetings, we respectfully request that they look over the list of national and state societies in the advertising pages of The Journal and notify us promptly of any errors.

Cumberland Valley Physicians Meet.—The seventh annual meeting of the Cumberland Valley Medical Association was held in Chambersburg, Pa., September 2, the president, Dr. Theodore H. Weagley, Marion, Pa., in the chair. The following officers were elected: President, Dr. De Witt C. R. Miller, Mason and Dixon, Pa.; vice-presidents, Drs. Peregrine Wroth, Jr., Hagerstown, Md., Philip R. Koons, Mechanicsburg, Pa., and P. Brough, Montgomery, Chambersburg, Pa.; secretary, Dr. John J. Coffman, Scotland, Pa. (re-elected); assistant secretaries, Drs. John R. Laughlin, Hagerstown, Md., E. Roberts Plank, Carlisle, Pa., and Henry C. DeVillbiss, Chambersburg, Pa., and treasurer, Dr. John J. Koser, Shippensburg, Pa. The next annual meeting will be held in Washington county, Md., probably at Pen Mar.

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Austregesilo Made Professor of Clinical Medicine at Rio.—The university at Rio de Janeiro has called to the chair of clinical medicine the local clinician and alienist, A. Austregesilo, a translation of whose work on "Mental Disorders in Ankylostomiasis" was published in the February *Alienist and Neurologist.* After the ceremony of installation the young professor found an automobile awaiting him outside, a present from his clients and other friends.

British Association for the Advancement of Science.—The seventy-ninth annual meeting of the British Association for the Advancement of Science met at Winnipeg, August 25-September 1, under the presidency of Sir J. J. Thompson, professor of experimental physics in the University of Cambridge. This makes the fourth time that this association has held its annual meeting outside of the British Isles; it met in Montreal in 1884, in Toronto in 1897, and in South Africa in 1905. At the opening meeting, Major McMahon read a letter from the retiring president, Francis Darwin, who was unable to be present. The association was welcomed to Winnipeg by the mayor of the city. The president-elect, Sir Joseph J. Thompson, delivered his inaugural address, which dealt with educational matters. The section meetings began on August 26. Saturday, August 28, was devoted to excursions and sightseeing. A special feature of the meeting was the establishment of a subsection devoted to agriculture. The total number attending was about 1,400, only about half the maximum number; yet this is a larger number than attended the Toronto meeting. The next annual meeting will be in Sheffield, England, Aug. 31 to Sept. 7, 1910, under the presidency of Rev. T. G. Bonney, D.Sc., LL.D., F.R.S., emeritus professor of geology, University College, London. According to custom, the officers of the sections will be appointed by the council about Christmas. Prof. John Perry, F.R.S., the general treasurer, and Major P. A. MacMahon, F.R.S., and Prof. W. A. Herdman, F.R.S., the general secretaries, were re-elected.

Death of Dr. Haffter of Switzerland.—The medical profession in Switzerland has sustained a severe loss in the death of Dr. Elias Haffter, editor-in-chief of the *Correspondenz-Blatt für Schweizer Aerzte*, president of the commission that accomplished the reorganization of the profession in Switzerland, and leader in the campaign against tuberculosis and in other branches of social medicine. He held a prominent position in the army, but resigned when his town, Frauenfeld, built a hospital and placed it in his charge. Besides a number of scientific literary contributions, his record of a trip around the world ran into several editions, and he organized and was president of an oratorio society. In commenting on Haffter's well-rounded life, the present editor of the *Correspondenz-Blatt* remarks: "No one can realize what it means to be the editor of a medical journal unless he has been one. All kinds of pleas and demands come to him; he has to restrain the impatience of contributors who want to see their works hurried into print and tranquilize others whose works have to be rejected for lack of space or other reason; he has to read all the manuscripts sent in and go over them with the blue pencil, verify corrections, etc., and, last but not least, he has to be a sort of universal information bureau, responding to inquiries in regard to assistants, etc., the best place to buy instruments, the solution of perplexing questions of professional ethics, etc." Haffter undertook this task for the *Correspondenz-Blatt* when Garrè laid it down to remove to Germany, and carried it on for twenty years, notwithstanding that his health was undermined by three severe attacks of pyemia, professionally acquired, the last proving fatal at the age of 58. He is cited as the embodiment of the ideal conception of the medical profession and of the happiness it brings when thus conceived. "Nothing more beautiful, nothing nobler," he used to say, "than our profession! The true physician is the exponent in the highest degree of the Golden Rule, but Sympathy alone is blind; Conscience and Science supply the eyes."

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Sept. 4, 1909.

Entomologic Research in Africa

In view of the intimate relations between certain insects and the propagation of diseases in man and animals in tropical Africa and of the similar relations between insects and plants having an economic value which is becoming more evident as settlement in that continent progresses, the secretary for the colonies, Lord Crewe, has appointed a scientific committee to study economic entomology with special reference to Africa. This body will be known as the African Entomological Research Committee and includes most of those who are eminent in tropical medical and allied science—Mr. E. Austen of the Natural History Museum, Dr. A. G. Bagshawe, director of the Sleeping Sickness Bureau, Col. Sir David Bruce, Dr. S. F. Harmer, keeper of zoology of the British Museum, Dr. R. S. Macdougall, entomologic adviser of the board of agriculture, Sir John Macfadyean of the Royal Veterinary College, Sir Patrick Manson, Professor Nuttall, and Dr. A. E. Shipley. Arrangements are being made to despatch a trained entomologist to the east side of tropical Africa and another to the west, in order to stimulate official and other residents to collect and observe noxious insects and to instruct them in scientific methods. By this means it is hoped to obtain throughout these territories an organized body of investigators who will send their collections and observations to the committee. These collections will be classified by a number of British and, in some instances, continental entomologists, and named specimens will be distributed to such institutions as may require them for purposes of instruction, both at home and in Africa. The committee also will keep in touch with the work which is being done in this branch in Egypt, the Sudan and South Africa, and the results will be published from time to time in a journal or bulletin.

Vaccine Therapy and Immunization

Vaccine therapy has now assumed great importance in the eyes not only of the profession but of the public. Two hospitals, St. Mary's and the Mount Vernon Hospital for Consumption, have issued appeals for special funds for its study and practice. These funds will be devoted to the maintenance of laboratories and laboratory workers and also to the support of wards in which the treatment will be conducted under the most favorable conditions. At St. Mary's Hospital the new department for therapeutic inoculation has been established in a special wing under the direction of Sir Almroth Wright, the pioneer of the modern development of the method. Here it has been most extensively used in the treatment of localized tuberculosis and the results have been excellent.

At the Mount Vernon Hospital the department is under the direction of Dr. R. W. Allen whose attention has been principally directed to affording protection against catarrh and influenza. He is applying the method to the forms of tuberculosis of the lung which are confined to a limited area. At St. Mary's Hospital the new department is controlled and financed by a special committee which is independent of that of the hospital and which contains many philanthropists who have guaranteed large subscriptions for a period of seven years. Thus Sir Ernest Cassel gives $5,000 a year, Mr. William Bonn $2,500, and Lord Justice Moulton $1,250.

Physical Exercises in Elementary Schools

Only recently have the education authorities recognized that physical health lies at the basis of education and that the object should be to develop a sound mind in a sound body. Formerly simply mental instruction was provided and no attention was paid to the health and very little to the physical development of the child. An important memorandum has just been issued by the board of education which shows that the authorities are now fully alive to the whole problem. It is pointed out that even proper nourishment, effective medical inspection, and hygienic surroundings will not of themselves produce a sound physique. A further requirement is exercise. This may, no doubt, be promoted, especially in country children, by a variety of means; but none of these is such that special systematic physical exercises should be entirely dispensed with. For town children such exercises are regarded as indispensable for the development of the body and for the correction of defects or evil habits induced by unhealthful physical environment. There should be a direct relation between the three factors of nutrition, general health and physical training. In their endeavors to establish such a relation the board have been deeply impressed with the inadequacy of the existing means. They issued for the first time in 1904 an official syllabus of exercises based on the Swedish system; this has now, as the result of the experience gained, been extensively revised. The exercises are arranged with a view to the harmonious development of all parts of the body and may be carried out without any special apparatus. Exercises likely to prove injurious to children of weak physique have been excluded.

Paupers Object to a Hindu Doctor

In the Butterworth Union of Leicestershire fifteen paupers signed a petition to the local government board (which controls the poor-law administration) protesting against the action of the local guardians in appointing Dr. J. C. Bhukerchargi, a native of India, as medical officer. The guardians replied by a unanimous vote of confidence in their officer.

PARIS LETTER

(From Our Regular Correspondent)

Paris, August 26, 1909.

Institute of Colonial Medicine

In 1902 an Institute of Colonial Medicine, affiliated with the Paris medical school, was founded to give instruction in tropical medicine to physicians. The course of instruction lasts about two and one-half months, the session beginning about October 15 and terminating toward the end of December. At the end of the session the pupils who pass the final examination successfully receive from the University of Paris the diploma of colonial physician. Since its foundation the Institute of Colonial Medicine has given about 200 of these diplomas. Properly qualified French and foreign physicians are admitted.

First Aid to the Injured in the Streets

For a long time there has been complaint about the deplorable custom of prescribing by pharmacists. Oddly enough, the police are the instigators of this illegal practice. When an accident occurs in the streets the police take the injured person to the nearest drug-store, and the druggist renders first aid. The local medical society (*Syndicat médical de Paris*) at its last session passed the following resolution: (1) Injured persons should not hereafter be taken to the nearest drug-store by administrative orders; (2) first-aid stations should be erected in the streets; (3) physicians who consent to take part in the medical service of these stations should serve in rotation.

French Congress of Surgery

The Twenty-second French Surgical Congress (*Association française de chirurgie*) will be held at the medical department of the University of Paris from Oct. 4 to 9, 1909, under the presidency of Dr. G. Richelot, member of the Academy of Medicine, and professor *agrégé*. The following subjects will be considered: (1) Surgery of arteries, essayists, Drs. Monod of Paris and Vanderts of Lille; (2) preoperative and postoperative treatment in abdominal surgery, essayists, Drs. Tuffier of Paris and C. Girard of Geneva; (3) surgical treatment in traumatisms of the spine and spinal cord, essayists, Drs. Auvray of Paris and Sencert of Nancy.

BERLIN LETTER

(From Our Regular Correspondent)

Berlin, Aug. 25, 1909.

A Convalescent Home for Officers in Taunus

The well-known lung sanatorium of Dettweiler in Taunus, one of the first private sanatoriums in Germany, was sold after the death of its founder as the business was no longer profitable, and it has been converted into a convalescent home for sick officers, the Offizierheim Taunus. The entire institution is a philanthropic foundation by a number of well-to-do manufacturers; the idea was originated by the general staff surgeon (*Generalstabsarzt*) of the Prussian army, Professor Schjerning. A few days ago the dedication of the home occurred in the presence of the emperor and empress. On this occasion Schjerning was advanced to the rank of a hereditary noble, a distinction which has been also granted to some previous incumbents of his post. The sanatorium is intended for sick and convalescing officers and sanitary officers, and is under the supervision of the minister of war. All forms of hygienic and dietetic curative methods are provided. The home furnishes accommodations for 52 patients and is to be in operation the entire year. The length of treatment up to six weeks is determined by the head physician. The consent of the minister of war is requisite to continue a treatment beyond this period. The institution does not admit patients with external diseases, tumors, tuberculosis or other infectious diseases, or requiring a capital operation. The expenses for care vary according to the respective grade of officers in the service (3 to 6 marks).

XVI International Medical Congress at Budapest

A large number of participants from Germany are to be expected in the Budapest congress which begins in a few days. This is very gratifying with reference to the principal purpose which these congresses fulfill, namely, to secure a good understanding among the representatives of the science and to bring the physicians of all nations into personal relation with one another. There can be no doubt of the great influence for international peace which is thus exerted. The various congresses in which the French and Germans have met together have undoubtedly contributed to the gradual subsidence of the irreconcilable public feeling of the two nations, and it likewise may be hoped that the Budapest congress may also have a favorable effect on the reconciliation of various nations. To be sure in some directions it has worked in opposition to this purpose. The Roumanian physicians have as a body refused to attend the congress, because the Hungarian government has treated the Roumanians badly, and for similar reasons the Bulgarian physicians will stay away. While these political considerations which have nothing to do with a medical congress are a misconstruction of the functions of an international medical congress, certain chauvinistic publications which have recently appeared from an anonymous correspondent in the *Münchener medizinische Wochenschrift* are actually belittling and shameful. There the objection was made against the Hungarian management of the congress that in the enumeration of the official languages, French is placed before German, and the like. It need hardly be feared that intelligent physicians will be affected by such publications, but there may be cranks, who express their patriotism especially by belittling other nations, to whom such remarks will prove infectious. The congress promises to be both a scientific and a social success.

Those who have entered the competition for the international prize offered by the Hungarian government for the best article published in recent years on the etiology of trachoma, are doomed to disappointment. As I understand, this prize will not be given because the jury (Professor Pfeiffer of Breslau, Professor Kolle of Bern, Professor v. Grósz of Budapest) have reached the conclusion that none of the articles offered fulfills the condition of being a notable advance on our present knowledge. This at the same time puts an end to the unedifying strife as to priority regarding the discovery of the trachoma corpuscles, between Professors Greeff and Halberstädter and v. Prowazek. Seven articles were offered in competition for the prize: three from Germany, two from Russia, one from Bulgaria, and one from Egypt.

Fifth International Dental Congress

The international dental congress is holding its session in Berlin according to the resolution adopted at St. Louis in 1904. The invitation was given at that time by Professor Miller, a native American who has had a prominent part in the development of dentistry on both the scientific and practical side. A special reason for holding this year's congress within the walls of Berlin is furnished by the circumstance that the central association of German dentists is now celebrating its semicentennial jubilee. The congress is well attended by dentists of all nations; Professor Waldeyer is honorary president, with Professor Walkhoff of Munich as acting president, and there are many delegates representing various governments. The proceedings of the section for hygiene of the mouth and teeth offer general interest. The question of the establishment of municipal school dental clinics was discussed. It was emphasized that the establishment of such clinics constitutes an important measure for the prevention and suppression of the diseases of the people, especially of tuberculosis. This resolution was passed: The establishment of school dental clinics is an international hygienic demand of our time. In addition the value of dental care in the army and navy was insisted on. As usual an exhibition of dentistry is associated with the congress, which furnished interesting and abundant material. At the jubilee of the central association of German dentists a large number of distinguished foreign dentists were elected as honorary members. It was further announced that the executive committee had decided to bestow three great medals for distinguished achievements in dentistry. One of these was received by Professor Dieck, who had performed valuable service for the congress.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Aug. 28, 1909.

Postgraduate Instruction and Other Inducements Offered to Army Doctors

A few months ago in this country, when all preparations for war had to be made in haste, it was found that in the Austro-Hungarian army, the number of military surgeons of sufficient experience and the general standard of knowledge of modern sanitation were inadequate. Several inducements to enter the army are now offered to young practitioners. A sum of $1,200 is guaranteed to every able-bodied medical student of the last term of the curriculum, payable in two instalments, at graduation and on entering the army. Provision has been made to enable army surgeons to take, after three years of service, a series of postgraduate classes at the expense of the ministry of war; the classes will be conducted by clinical professors, and hereafter the surgeon will be able to do work at various clinics for two years. Quicker promotion to the rank of regimental surgeon (equal to captain) is obtained by dispensing with a series of theoretical examinations; this grade will now be reached within five years from entering the army. The rank of staff surgeon (equal to the major of the regular army) will be accessible to every regimental surgeon within twelve years from entering the army without any further examination, hitherto a difficulty of first rank. Special stress is laid on practical instruction, for which purpose a ten-week-class will be held for regimental surgeons eligible to the post of staff surgeon; these classes are to comprise instruction and practical work on sanitation of fortresses, evacuation of field hospitals, inspection of the sanitary arrangements of brigades and corps. The regular pay for the medical officer of the army is still low, beginning with $40 a month, $60 for the regimental surgeon, and $100 for the staff surgeon, but there are several other emoluments. One is the expectation of a pension after ten years' service, amounting to about $400 a year at that time, and rising by 10 per cent. for each further year to a maximum of about $1,000. On the other hand, each doctor entering the army must pledge himself to serve at least ten years, unless he should be earlier retired, in which case a pension may also be obtained. It is expected that these advantages will not only serve to complete the required number of military medical officers, but will also have the desirable effect of lessening the number of those men who take up general practice in the towns

BERGEN LETTER

(From Our Special Correspondent)

BERGEN, NORWAY, August 21, 1909.

The Second International Leprosy Congress

The second International Leprosy Congress was held in this city, August 16-19. It was opened by King Haakon and among the distinguished persons in attendance were Hansen, Kitasato and Hutchinson. Excellent opportunities were given for clinical study at the hospitals, one of which, the St. Joergans, was founded in 1410, and is the only remaining medieval lazaretto in western Europe. Physicians only are allowed to visit these institutions. Numerous microscopic specimens were shown, Dr. Hansen exhibiting a slide from the noted Early case of New York. Dr. Hansen is well and favorably known in *the United States*, where he visited in 1888 in behalf of the lepers of Minnesota. Since 1865 leprosy has decreased in Norway from 2,870 cases to about 400. This is generally attributed to segregation.

Dr. Currie, U. S. M.-H. S., Honolulu, presented an article on "The Status of Leprosy in the United States," and the measures taken for the study and prevention of the disease. In Hawaii there are about 900 cases, 764 of the patients being natives. The government has an investigating station on the island of Molokai.

In the United States 278 cases have been reported, and statistics show a marked increase. There *are probably* many unrecognized and concealed cases. Dr. Shively, New York, reported three cases in the Presbyterian Hospital and knew of two wealthy patients sojourning at a fashionable hotel. Dr. Ravogli, Cincinnati, reported a patient at large in that city. Dr. Wise, medical director, U. S. N., Washington, recommended thorough investigation of the hygienic conditions where leprosy was found and rigorous segregation to prevent the establishment of new foci. This would not necessarily involve any hardship but rather the reverse; the common affliction creating a bond of sympathy rendering mutual assistance in these institutions very marked.

Professor Ehlers, Copenhagen, gave an account of his experiments to ascertain if the disease could be transmitted by insects (gnats and bedbugs), a hypothesis advanced by Goodhue of Hawaii and Noe of New Caledonia; but he was unable to verify it. Last January he was sent to the Danish West Indies to investigate leprosy on the island of Vera Cruz. On his return he visited the United States, where he confirmed the diagnosis already made by Drs. Woodward and Kenyon in the Early case. [See THE JOURNAL, Sept. 11, page 906.—ED.]

Professor Duering, Dresden, spoke on the question of heredity. In his early experiences he considered leprosy to be hereditary, but later observations have led him to believe it to be only infectious; that children of leprous parents, if segregated before infection, will not have it.

Professor MacLeod of the London School of Tropical Medicine gave an exhaustive treatise on recent microscopic study of leprosy. By special methods of staining it is now possible to distinguish the young, old and dead bacilli and it is now known that most of the bacilli found in the tissues are dead. The *Bacillus lepræ* has a cladothrix arrangement, branching forms like actinomyces, suggesting that it belongs to the streptothrix class. No medium has been found on which it will grow and no lower animal is susceptible to it. Treatment is still in the experimental stage; various remedies are being tried, good results being reported by some and failures by others. The best result I saw was in a patient shown by Professor Boeck, Christiania, who was kept under favorable hygienic conditions only.

Many other valuable papers were read by distinguished authors. A full report of the proceedings will be published by Johann Ambrosius Barth, Leipsic.

If all medical students would learn one common language it would add greatly to the value of meetings of this kind and allow much valuable time to be employed in medical research that is now used in studying various foreign languages. Esperanto has been adopted as the official language of the International Red Cross, and members after five weeks' study, with two lessons a week, are able to carry on ordinary conversation in any part of the world. With its universal rules and simple construction it is said to be to language what algebra is to mathematics. Certainly the time has arrived when an international language is demanded.

[EDITOR'S NOTE: A further report will be given in THE JOURNAL next week.]

Pharmacology

SERUMS AND VACCINES

Report to the Council on Pharmacy and Chemistry of the Committee on Serums and Vaccines

The Council having decided to consider serums and vaccines for inclusion with New and Nonofficial Remedies, it appointed a committee of the Council to consider these products and to report thereon. The committee submitted a preliminary report and recommended its publication; the recommendation was adopted and in accordance therewith the preliminary report is published below.

W. A. PUCKNER, Secretary.

REPORT OF THE COMMITTEE ON SERUMS AND VACCINES

The committee on serums and vaccines submits the report given below and recommends its publication:

If the term drug is used in the broad sense it will be admitted that the vaccines, viruses and serums constitute one of the most important groups of drugs with which the physician has to deal. Some preparations of this group are specific cures for certain diseases; others are invaluable in prophylaxis and diagnosis. The great importance of exercising some degree of governmental control over these products was recognized by the passage by Congress in 1902, of a law entitled "An Act to Regulate the Sale of Viruses, Serums, Toxins and Analogous Products in the District of Columbia, to Regulate Interstate Traffic in Said Articles, and for Other Purposes." This law antedated by several years the law controlling the substances more usually called drugs.

In order that the physician may obtain information in a concise form concerning this important group of remedies, the Council on Pharmacy and Chemistry voted to include in "New and Nonofficial Remedies" a description of the preparations which may be legally sold in interstate commerce in the United States and which are not in conflict with the rules of the Council. To this end those firms which have licenses to manufacture and sell in interstate commerce remedies of this class have been invited to submit descriptions of their products to the Council. These descriptions will appear later.

It has been deemed advisable to publish at the present time a complete list of the manufacturers, both foreign and American, who have secured licenses. In order to obtain such a license it is necessary for an establishment desiring it to request the Surgeon-General of the U. S. Public Health and Marine-Hospital Service to have an inspection made of its laboratories, methods, products, etc. This inspection is made by an officer of that service, and consists in a careful examination of the stables, laboratory facilities, methods, animals, collection of the serum, standardization, and tests for potency, purity and amount of preservatives. Samples of the products from licensed manufacturers are bought on the open market and examined at frequent intervals in the Hygienic Laboratory of the Public Health and Marine-Hospital Service. The inspection of the laboratories is repeated at least once a year and if insanitary conditions are found, or if the products are not what they are claimed, the license is suspended.

Antidiphtheritic and antitetanic serums are required to conform strictly to the standards which have been established by the United States Government. There being no established standard for the various other products, they are not examined for their therapeutic value in the laboratory, but are tested for the amount of preservative and freedom from bacterial and toxic contaminations. Vaccine virus is examined particularly for its freedom from pathogenic bacteria, especially tetanus, and also for its potency. The list of manufacturers follows:

LIST OF ESTABLISHMENTS MANUFACTURING SERUMS, ETC., LICENSED PRIOR TO JULY 15, 1908

License No.	Establishment.	Products.
1	Parke, Davis & Co., Detroit, Mich.	Antidiphtheritic serum, antitetanic serum, antitstreptococcic serum, antigonococcic serum, erysipelas and prodigiosus toxins (Coley), tuberculins, bacterial vaccines and vaccine virus.
2	H. K. Mulford Co., Philadelphia, Pa.	Antidiphtheritic serum, antitetanic serum, antistreptococcic serum, antipneumonic serum, antigonococcic serum, antidysenteric serum, tuberculins, bacterial vaccines and vaccine virus.
3	Dr. H. M. Alexander & Co., Marietta, Pa.	Antidiphtheritic serum, antirabic virus, vaccine virus and tuberculins.
5	Fluid Vaccine Co., Milwaukee, Wis.	Vaccine virus.
8	Cutter Analytic Laboratory, Berkeley, Cal.	Antidiphtheritic serum, antistreptococcic serum, antityphoid serum, tuberculin and vaccine virus.
9	Frederick Stearns & Co., Detroit, Mich.	Antidiphtheritic serum, streptolytic serum, *pneumolytic serum.*
11	Pasteur Institute of Paris, France.	Antidiphtheritic serum, antistreptococcic serum, antiplague serum, antidysenteric serum, antimeningococcic serum and serum antivenimeux.
12	Chemische Fabrik auf Actien (vorm. E. Schering), Berlin, Germany.	Antidiphtheritic serum and antistreptococcic serum.
14	Health Department of the City of New York.	Antidiphtheritic serum.
15	W. R. Hubbert Serum Laboratory, Detroit, Mich.	Antidiphtheritic serum.
16	National Vaccine and Antitoxin Institute, Washington, D. C.	Antidiphtheritic serum, antigonococcic vaccine, vaccine virus and normal horse serum.
17	Lederle Antitoxin Laboratories, New York City.	Antidiphtheritic serum, antitetanic serum, tuberculins, bacterial vaccines, vaccine virus, antistreptococcic serum, and suspension of lactic acid bacilli.
18	Burroughs, Wellcome & Co., London, England.	Antidiphtheritic serum, antistreptococcic serum, antityphoid serum, antistreptococcic vaccine, antistaphylococcic vaccine, antigonococcic vaccine and antityphoid vaccine.
19	Memorial Institute for Infectious Diseases, Chicago, Ill.	Antidiphtheritic serum.
21	Swiss Serum and Vaccine Institute, Berne, Switzerland.	Antidysenteric serum, antipneumococcic [illegible]n, anti- [illegible] serum, [illegible] vaccine, antityphoid vaccine and tuberculins.
22	Institute Bacteriologique de Lyon, Lyons, France.	Antidiphtheritic serum and normal goat serum.
24	Farbwerke, vormals, Meister Lucius & Bruning, Hoechst-on-Main, Germany.	Antidiphtheritic serum, antistreptococcic serum, antidysenteric serum and tuberculins.
25	Tuberculin Society of St. Petersburg, St. Petersburg, Russia.	Tuberculinum purum.
26	Institut de Vaccine Animale, Paris, France.	Vaccine virus.
27	Institut Pasteur de Lille, Lille, France.	Serum antivenimeux.
28	Bacteriologisches Inst. Linger, Dresden, Germany.	Pyocyanase.

Correspondence

Preservation of Historical Data—An Appeal

To the Editor:—Up to the present time there has been no concerted effort made to collect and preserve historical data in regard to the origin, evolution and personnel of our profession in this part of the country. The result of this delinquency has been the total loss of much material that should have been preserved, especially pertaining to medical schools and societies, and biographical matter in connection with the practitioners and teachers of medicine of by-gone days. A good deal of material of this character is still obtainable if a systematic effort is made to locate and preserve it. It is in the possession of individuals, families and private libraries and will eventually be lost. The Western Association for the Preservation of Medical Records was organized in May, 1909, for the purpose of collecting the historical and biographical records of the profession of the west and south. We wish to preserve anything and everything pertaining to western medicine and medical men and are anxious to enlist the active help and support of every member of the profession who is in sympathy with our aims. We want every one to become associated and identified with the work of our association. There are no fees or obligations of any kind. We have made arrangements with the Lloyd library, Cincinnati, Ohio, for the proper housing of the material collected. The latter will be systematically arranged, catalogued and properly preserved so that it can be made available for research work. We are particularly anxious to obtain:

1. Medical journals published in the west prior to 1880.
2. Medical books and pamphlets written or published in the west.
3. Manuscripts and autographs of early western physicians.
4. Old diplomas and other documents of a medical character.
5. Proceedings of medical societies.
6. Reports of hospitals and other medical institutions.
7. Catalogues and announcements of western medical colleges of all "schools."
8. Biographies and portraits of western physicians.
9. Information and material of any kind pertaining to medicine and medical men and affairs in the west.
10. Curios of a medico-historical character.

All contributions should be sent in care of the librarian. In view of the fact that we are performing a labor of love and have no funds, our friends and associates will readily understand why all contributions sent by express or freight should be prepaid so that no expense may accrue to the association. The necessary expenses of the association are at present being met by voluntary contributions of its organizers.

May we not count on your active help and support? We would like to hear from every member of the profession who is interested in the proposed work.

Charles A. L. Reed, M.D., Chairman.
Otto Juettner, M.D., Secretary.
A. G. Drury, M.D., Librarian, 710 West Eighth Street, Cincinnati, Ohio.

Comment: The importance and value of the work which this new association has undertaken was discussed editorially in The Journal, April 14, 1909, p. 561.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

IMMUNIFACIENT — A NEW WORD

To the Editor:—Some years ago, while writing a paper I wished to speak of diseases which give immunity from a second attack, that is, which render the organism refractory to a repetition. I could find no such word in the medical dictionaries. In order to escape circumlocution the word "semelincident," meaning "happening but once," occurred to me. This word, a useful one, has been used much, but has not been included in any medical dictionary to my knowledge. It would seem to be an addition to medical nomenclature.

T. L. Hazzard, Pittsburg, Pa.

Answer.—May we be so impolite as to suggest a word which seems to us far better? "Immunifacient," from the Latin *immunis*, immune, and *faciens*, making, is a word that hardly requires explanation, being formed on the analogy of "rubefacient." Similarly may be made the word "immunifaction." "Immunifacient" and "immunifaction," so far as we know, are new.

LITERATURE ON DELAYED CHLOROFORM POISONING

To the Editor:—Please give me a list of articles which have appeared in the last year or two on delayed chloroform poisoning.

A. I. Lawbaugh, Calumet, Mich.

Answer.—The following articles on delayed chloroform poisoning have appeared since the beginning of 1907:

"Delayed Chloroform Poisoning" by R. Ramsey, in *Brit. Med. Jour.*, May 25, 1907.

"Delayed Chloroform Poisoning" by J. C. Renton, in *Brit. Med. Jour.*, March 16, 1906; abstr. in The Journal, April 13, 1907, p. 1301.

"Influence of Oxygen on the After-Effects of Chloroform" by P. Lengemann, in *Mitt. a. d. Grenzgeb. d. Med. u. Chir.* (the Mikulicz Memorial Number); abstr. in The Journal, March 23, 1907, p. 1070.

"Acidosis (Delayed Chloroform Poisoning)," by A. N. McArthur, in *Intercolonial Med. Jour.*, August, 1907; abstr. in The Journal, Nov. 2, 1907, p. 1561.

"Acute Yellow Atrophy of Liver Following Chloroform Anesthesia" by N. Guleke, in *Arch. f. klin. Chir.*, lxxxiii, No. 2; abstr. in The Journal, Oct. 12, 1907, p. 1316.

"Treatment of Delayed Chloroform Poisoning" by A. P. Beddard, in *Lancet*, London, March 14, 1908; abstr. in The Journal, April 11, 1908, p. 1224.

"Fatal Case of Delayed Chloroform Poisoning" by H. C. Wilson, in *Lancet*, London, Feb. 29, 1908.

"Three Cases of Delayed Chloroform Poisoning" by E. D. Telford, in *Lancet*, London, Feb. 29, 1908.

"Case of Acid Intoxication Following Administration of Chloroform" by H. Thorp, in *Lancet*, London, Feb. 29, 1908.

"Chloroform Necrosis of the Liver" by H. G. Wells, in *Arch. Int. Med.*, July, 1908; abstr. in The Journal, Oct. 24, 1908, p. 1462.

"Chemistry of the Liver in Chloroform Narcosis (Delayed Chloroform Poisoning)," by H. G. Wells, in *Jour. Biol. Chem.*, October, 1908.

"Chloroform Poisoning," by J. V. Shoemaker, in *Monthly Cycl. and Med. Bull.*, September, 1908.

"Acute Degeneration of Liver Following Chloroform Narcosis," by F. Corbett, in *Jour. Minn. Med. Assn.*, Oct. 4, 1908.

"Fatal Toxemia After Administration of Chloroform," by M. F. Taylor, in *Lancet*, London, Sept. 12, 1908.

"Experimental Study of the Metabolism and Pathology of Delayed Chloroform Poisoning," by J. Howland and A. N. Richards, in the *Jour. Exper. Med.*, March, 1909; abstr. in The Journal, April 3, 1909, p. 1144.

"The Syndrome in Fatal Tardy Chloroform Poisoning," by A. Sippel, in *Arch. f. Gynäk.*, lxxxviii, No. 1; abstr. in The Journal, May 22, 1909, p. 1725.

"Internal Chloroform Intoxication and Its Treatment," by K. Wirth, in *Wien. klin. Wchnschr.*, Jan. 14, 1909; abstr. in The Journal, Feb. 20, 1909, p. 672.

"Acute Toxemia After Chloroform Anesthesia," by F. W. Heysett, Freesoil, Mich.; paper read at meeting of Michigan State Medical Society, abstr. published in The Journal, Aug. 29, 1909, p. 785. The entire article appeared in the *Jour. Mich. Med. Soc.*, April, 1909.

"Necrosis of the Liver After Chloroform Anesthesia," by J. R. Williams and W. D. Becker, in The Journal, May 8, 1909, p. 1489.

"Chloroform Lesions of Liver," by E. Weill, P. Vignard, and G. Mourequand, in *Lyon Chir.*, December, 1908; abstr. in The Journal, Feb. 6, 1909, p. 513.

"Chloroform Poisoning; Liver Necrosis and Repair," by G. H. Whipple and J. A. Sperry, in *Bull. Johns Hopkins Hosp.*, September, 1909.

CARROT SOUP IN INFANT-FEEDING

A correspondent asks for clearer directions in regard to making carrot soup, mentioned in abstract 76 on page 153 of The Journal, July 10, 1909. Beck says that he makes the carrot soup according to Moro's directions, peeling and chopping one pound of carrots and boiling them in water for an hour or two, then passing them through the finest wire sieve and mixing with one liter of bouillon made from one pound of beef and one liter of water, put on cold, and one teaspoonful of salt. Moro's article was summarized in The Journal, Sept. 12, 1908, page 955. The original states more definitely that 375 gm. of peeled carrots are chopped and boiled down in water till the total mass forms about 200 c.c., which requires from 30 to 45 minutes. The mass is then forced through the finest wire sieve into one liter of bouillon, and 6 gm. of salt is added. The beef broth is made, as usual, from 500 gm. beef and bone, put on cold. (The article says "50 gm.," but this is corrected in the following issue as a proof error.)

ESTIMATION OF PROTEIDS IN MILK

To the Editor:—Please publish description of method for the estimation of proteids in milk by the phosphotungstic and hydrochloric acid precipitation in Esbach tube.

J. T. Thornton, Wheeling, W. Va.

Answer.—The method referred to is given by T. R. Boggs (*Bull. Johns Hopkins Hosp.*, October, 1906, No. 187) as follows: Twenty-five gm. phosphotungstic acid are dissolved in 125 c.c. of distilled water, and when solution is complete an equal quantity of dilute hydrochloric acid is added. The solution is stable, and keeps for months in a dark bottle. The method of procedure is as follows: The diluted milk is poured into an ordinary Esbach albuminometer tube (reading from 1 to 7 gm. per liter) up to the mark U; the phosphotungstic acid solution is then added up to the mark R; the tube is corked and slowly inverted twelve times, shaking being avoided. The tube is then placed in a rack for twenty-four hours, and the percentage read off at the level of the top of the precipitate. The optimum dilution for human milk is 1 in 10, for cow's milk, 1 in 20; if the proteid content is low a less dilution may be employed. Controlled by Kjeldahl nitrogen determinations the mean error was 0.3 per cent., the extreme 0.7 per cent. Temperatures of from 15 to 25 C. and the presence or absence of cream make no difference in the volume of the precipitate, which attains a minimum after standing twenty-four hours, and does not alter on further standing.

The Public Service

Medical Department of the Army

Changes for the week ended Sept. 11, 1909:

Fisk, Owen C., 1st lieut., M. R. C., granted 15 days' leave of absence.

Morse, Arthur W., major, granted 30 days' leave of absence.

Gilchrist, Harry L., major, ordered to proceed from Fort Omaha, Nebr., to Fort Meade, S. D., for temporary duty.

Knox, Howard A., 1st lieut., M. R. C., granted leave of absence for 10 days, to take effect about Sept. 20, 1909.

Truby, Albert E., major, relieved from duty as commanding officer, Co. A, Hospital Corps, and ordered to proceed to San Francisco, in time to take the transport sailing for Manila, P. I., about Nov. 5, 1909, for duty in the Philippines Division.

Bastion, Joseph E., M. R. C., relieved from duty at Fort D. A. Russell, Wyo., and ordered to report on Oct. 1, 1909, to Col. Valery Havard, President, Army Medical School, for a course of instruction.

Whinnery, Jean C., dental surgeon, relieved from duty at Vancouver Barracks, Wash., and will proceed to San Francisco, in time to take the transport sailing for Manila, P. I., about Oct. 5, 1909, for duty in the Philippines Division.

Hogg, Cassius C., Med. Corps, Va. Nat. Guard, Chittick, Archibald G., Med. Corps, Ind. Nat. Guard, McMaster, John G., Med. Corps, S. C. Nat. Guard, Stanley, J. M., asst.-surgeon, Miss. Nat. Guard, ordered to report on Oct. 1, 1909, to Col. Valery Havard, President, Army Medical School, for a course of instruction in that School.

Shepard, John L., capt., relieved from duty at Fort Sam Houston, Tex., and ordered to Fort Logan, Colo., for duty.

Heath, George D., Jr., 1st lieut., relieved from duty at the Army General Hospital, San Francisco, and ordered to Fort Logan, Colo., for duty.

Schmitter, Ferdinand, 1st lieut., relieved from duty at Jefferson Barracks, Mo., and ordered to Fort Logan, Colo., for duty.

Guittard, Alwin M., 1st lieut., M. R. C., relieved from duty at Fort Logan, Colo., and ordered to sail from San Francisco, Cal., on the transport sailing for Manila, P. I., about Nov. 5, 1909, for duty in Philippines Division.

Hull, Alva R., 1st lieut., M. R. C., relieved from duty at Fort Logan, Colo., at the expiration of his leave of absence and ordered to report to the Commanding General, Department of Texas, for duty in that department.

Archer, William M., Jr., 1st lieut., M. R. C., granted leave of absence for 2 months, about Sept. 8, 1909.

Lynch, Charles, major, Reynolds, Charles R., major, Baily, Howard H., capt., detailed as judges in the inter-company competition in the application of first aid to the injured, Oct. 2, 1909, at Wilkes-Barre, Pa.

Pillsbury, Henry C., 1st lieut., relieved from duty as surgeon of the transport *Logan*, and ordered to the United States, with permission to return by the eastern route.

Raymond, Thomas U., major, granted leave of absence for 25 days, about Sept. 1, 1909.

Ashburn, James K., Burket, John A., Demmer, Charles C., Fisk, Owen C., Foster, George B., Jr., Fox, James S., Haley, James C., Johnson, Thomas H., Jones, Glenn I., King, Charles T., McCornack, Condon C., Napier, Edward L., Austin, Thomas C., 1st lieuts., M. R. C., ordered to report on Oct. 1, 1909, to Col. Valery Havard, President, Army Medical School, for a course of instruction in that School.

Fuller, Leigh A., major, having arrived at San Francisco, will proceed to Fort Adams, R. I., for duty.

Nichols, Henry J., Hanson, Louis H., Hopwood, Lucius L., Freeman, Charles E., Schmitter, Ferdinand, McIntyre, Henry B., 1st lieuts., promoted from 1st lieutenant to captain in the Medical Corps, to rank from June 30, 1909.

Cooper, Alexander T., Gentry, Ernest R., Aydelotte, John T.,
Kremers, Edward D., De Voe, Ralph G., Klotz, Solomon P., Allen,
William H., Cornwall, Delos E., Darby, Taylor E., Shugerman, Harry
P., Carr, [illegible] E., Edwards, George M., Weed,
Mark D., [illegible] Kramer, Floyd, Beery, Harry
R., Davis, [illegible] n L., Michie, Henry C., Jr.,
Herlebowe[illegible] 'homas
Casper [illegible], McAf
Julian M., [illegible] Albert
D., Hill, [illegible] Davis
William H., [illegible], Edward M., Jr., Etter,
Everett S., Lamb, William P., appointed 1st
ical Reserve Corps, with rank from Sept. 1, 1909.

Carpenter, Alden, dental surgeon, relieved from temporary duty at Fort Wadsworth, N. Y., and ordered to Madison Barracks, N. Y., for temporary duty.

Medical Corps of the Navy

Changes for the week ended Sept. 11, 1909:

Hoyt, R. E., P. A. surgeon, discharged from treatment at the Naval Hospital, Mare Island, Cal., and ordered to duty at that Hospital.

Smith, C. G., surgeon, ordered to duty at the Naval Hospital, Newport, R. I.

Hull, H. F., P. A. surgeon, detached from the Naval Hospital, Newport, R. I., and ordered to the *Des Moines*.

Tolfree, H. M., P. A. surgeon, detached from the *Des Moines* and ordered home to wait orders.

Morris, L., surgeon, ordered to the *Georgia*.

Crandall, R. P., surgeon, detached from the *Georgia* and ordered home to wait orders.

Raison, T. W., asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., and directed to wait orders.

Health Reports

The following have been reported to the Marine-Hospital Service, during the week ended Sept. 10, 1909:

SMALLPOX—UNITED STATES

Iowa: Cedar Rapids, Aug. 1-31, 1 case.
Louisiana: New Orleans, Aug. 21-28, 1 case.
Minnesota: Duluth, Aug. 20-27, 1 case.
Montana: Butte, Aug. 12-26, 6 cases.
Ohio: Dayton, Aug. 21-28, 7 cases; Toledo, July 31-Aug. 7, 1 case.
Oregon: (4 counties), May 1-31, 31 cases.
Utah: (11 counties), July 1-31, 110 cases, 1 death.

SMALLPOX—FOREIGN

Algeria: Bona, July 1-31, 19 cases, 10 deaths.
Brazil: Pernambuco, June 1-15, 11 deaths; Rio de Janeiro, July 25-Aug. 1, 3 cases, 1 death.
Ceylon: Colombo, May 8-15, 1 case.
Chile: Valparaiso, June 26-Aug. 7, present.
China: Tientsin, June 26-July 3, 1 case, 2 deaths.
Egypt: Cairo, July 10-29, 1 case, 1 death.
India: Bombay, July 20-Aug. 3, 10 deaths; Madras, July 16-23, 1 death; Rangoon, July 17-24, 3 deaths.
Italy: Genoa, Aug. 1-15, 1 case; Naples, Aug. 8-15, 22 cases, 6 deaths.
Java: Batavia, July 18-24, 2 cases.
Mexico: Chihuahua, Aug. 15-22, 1 case; Guadalajara, Aug. 12-19, 1 case; Veracruz, Aug. 15-22, 2 cases, imported.
Persia: Shiraz, June 7, present.
Russia: Moscow, July 24-31, 14 deaths, Aug. 7-14, 8 cases, 2 deaths; Odessa, Aug. 1-7, 2 cases; Riga, Aug. 7-14, 8 cases; St. Petersburg, July 24-Aug. 6, 28 cases, 10 deaths; Warsaw, June 19-July 3, 3 deaths.
Spain: Barcelona, Aug. 9-21, 11 deaths; Valencia, July 31-Aug. 14, 7 cases; Vigo, Aug. 7-14, 2 deaths.
Tripoli: Tripoli, Aug. 1-7, 8 cases, 2 deaths.

YELLOW FEVER

Venezuela: Maiquetia, Aug. 14-21, 1 case, in suburbs.

CHOLERA—INSULAR

Philippine Islands: Manila, July 10-17, 1 case, 1 death; Provinces, July 3-10, 580 cases, 386 deaths.

CHOLERA—FOREIGN

China: Hankow, July 10-17, 1 case, 1 death.
India: Bombay, July 20-Aug. 3, 37 deaths; Calcutta, July 18-24, 17 deaths.
Indo-China: Saigon, July 10-17, 1 case, 1 death.
Russia, General, Aug. 13-20, 664 cases, 289 deaths; St. Petersburg, 201 cases, 71 deaths.

PLAGUE

Chile: Iquique, July 28, 7 cases, in lazaretto.
China: Hongkong, July 10-24, 10 cases, 7 deaths.
India: Bombay, July 20-Aug. 3, 53 deaths; Calcutta, July 17-24, 17 deaths.
Indo-China: Saigon, July 10-17, 16 cases, 14 deaths.
Peru: General, July 31-Aug. 7, 21 cases, 5 deaths; Callao, Aug. 4-7, 1 case, 1 death.
Russia: Ural District, Aug. 5-13, 19 cases, 19 deaths.
Venezuela: Caracas, Aug. 7-16, 4 cases, 2 deaths.

Public Health and Marine-Hospital Service

List of changes for the seven days ended Sept. 8, 1909:

Eager, J. M., surgeon, granted 1 day's leave of absence, Sept. 7, 1909.

King, W. W., P. A. surgeon, granted 30 days' leave of absence from Sept. 8, 1909.

Currie, D. H., P. A. surgeon, granted 21 days' leave of absence en route to station.

Bahrenburg, L. P. H., P. A. surgeon, granted 13 days' leave of absence from Aug. 17, 1909, on account of sickness.

de Valin, Hugh, asst.-surgeon, granted 3 days' leave of absence en route to station.

Lyon, R. H., asst.-surgeon, granted 1 day's leave of absence in August, 1909, under paragraph 191, Service Regulations.

Deerhake, Wm. A., acting asst.-surgeon, granted 1 day's leave of absence in August, 1909, under paragraph 210, Service Regulations.

Houghton, M. W., acting asst.-surgeon, granted 7 days' leave of absence from Oct. 4, 1909.

Kennedy, S. R. M., acting asst.-surgeon, granted 30 days' leave of absence from Sept. 1, 1909.

MacCaffry, W. B., acting asst.-surgeon, granted 2 days' leave of ab-absence in August, 1909, under paragraph 210, Service Regulations.

Mason, Wm. C., acting asst.-surgeon, granted 6 days' leave of absence from Sept. 19, 1909.

Onuf, B., acting asst.-surgeon, granted 1 day's leave of absence, Aug. 14, 1909, under paragraph 210, Service Regulations.

Simonson, G. T., acting asst.-surgeon, granted 2 days' leave of absence from Sept. 7, 1909.

Tuttle, Jay, acting asst.-surgeon, granted 30 days' leave of absence from Sept. 14, 1909.

RESIGNATION

Surgeon Milton J. Rosenau, resignation accepted by the President, to take effect January 31, 1910.

Society Proceedings

COMING MEETINGS

Amer. Academy of Ophth. and Oto-Laryngology, New York, Oct. 4-6.
Amer. Assn. Obstet. and Gynecologists, Ft. Wayne, Ind., Sept. 21-23.
Amer. Association of Railway Surgeons, Chicago, October 20-22.
Delaware State Medical Association, Dover, October 8.
Indiana State Medical Association, Terre Haute, October 7-8.
Kentucky State Medical Association, Louisville, October 19-21.
Minnesota State Medical Association, Winona, October 13-14.
Mississippi Valley Medical Association, St. Louis, October 12-14.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
South Dakota State Medical Association, Aberdeen, October 6-8.
Utah State Medical Association, Ogden, September 21-22.
Vermont State Medical Assn., White River Junction, Oct. 14-15.
Virginia, Medical Society of, Roanoke, October 5-8.
West Virginia State Medical Association, Elkins, October 6-8.

SIXTEENTH INTERNATIONAL MEDICAL CONGRESS

Held at Budapest, Aug. 29-Sept. 4, 1909

The Sixteenth International Medical Congress held its formal opening meeting on Sunday, August 29, at 11 a. m., in the banqueting hall of the Municipal Festival Hall.

On August 30, the city officials gave a banquet and reception in honor of the delegates attending the congress.

Opening Ceremony and Addresses of Welcome

The congress was opened by Archduke Joseph, who delivered a brief address in French. The Hungarian minister of public education and public worship then made an address devoted chiefly to hygiene and preventive medicine.

M. Calman de Fulepp, prefect of Budapest, welcomed the congress to the city.

Presidential Address: Progress in Medicine

Dr. Kalman Müller, the president of the congress, was prevented by illness from attending, but his address was read by another officer. It dealt chiefly with the recent developments in medicine. Firm ground in pathologic anatomy having been reached, the developments of bacteriology and parasitology followed, to be reinforced in their turn by the immense masses of work being done in the investigation of the problems of immunity. Cytology has developed, he said, *pari passu*, and everywhere vague methods of inquiry have been replaced by investigation into the life of the cell, making us acquainted with its complicated biochemical and biomechanical relations—and so we have a new hematology. The latest discoveries in physics and theories as to radioactivity have been pressed into the service of medicine, not as auxiliary sciences, but as integral parts of a great whole, while at every step forward a new perspective opens and a view of fresh fields is offered. After enumerating proofs of the scientific progress which has been made on indisputable grounds by modern therapy, the address closed with the following peroration: "Medicine is a science of expediency; it originated the necessity to relieve human suffering and as pure rough empiricism. To-day we work on the strictest scientific methods which are at the disposal of the exact physical sciences, and we have successes to point to, to which undeniable statistics bear witness, showing with what weapons medicine can safeguard the life and health of the individual and how fortified she is to protect whole continents against the ravages of epidemics. With full right our breasts are filled with the noble consciousness that no science stands up so wholly in the service of Altruism as medicine."

Report of Secretary

M. Em. de Grósz, general secretary, made his report, which showed that the national committee which abroad assisted in preparing for the congress comprised in all 800 members. With their help the congress is thoroughly international. The latest figures are: America, United States, 202; Argentine Republic, 37; Austria, 235; Belgium, 47; Bosnia, Herzegovina, 9; Brazil, 25; Bulgaria, 18; Chili, 4; Cuba, 6; Denmark, 10; Egypt, 21; France, 281; Germany, 288; Great Britain and Ireland with colonies, 97; Greece, 19; Italy, 170; Japan, 48; Mexico, 3; Monaco, 2; Norway, 2; Netherland, 33; Portugal, 32; Roumania, 10; Russia, 228; Servia, 7; Spain, 67; Sweden, 5; Switzerland, 29; Turkey, 22; Uruguay, 3. Adding the 1,436 Hungarian members, our congress numbers 3,432 adherents, accompanied by 900 members of their families. Governments are represented by 274, universities by 149, municipal and other authorities by 149, medical and other societies by 327, diverse institutions by seven delegates to our scientific assembly.

Recalling the words of Pasteur that "the realm of science embraces the whole of humanity," Dr. Grósz congratulated the congress on its international character.

Addresses of Official Delegates

Addresses were made by the official delegates of the following nations; because of the poor acoustic properties of the hall the speakers were almost inaudible:

The various nations were listed according to the French alphabet; therefore Germany, i. e., Allemagne, began in the person of Professor Uhthoff. Austria, which came next, was represented by Ritter von Huberler. Dr. Victor Desguin spoke for Belgium; Dr. Ivanoff for Bulgaria; Prof. Alejandro del Rio for Chili; Professor Agramonte for Cuba; Professor Salamonsen for Denmark; Prof. A. de Simonena for Spain; Professor Laudouzy for France; Dr. F. W. Pavy for Great Britain; Professor Killionzis for Greece; Prof. G. Baccelli for Italy; Professor Kitasato for Japan; Dr. Guevedo y Zubieta for Mexico; Dr. Gaillard for Monaco; Prof. Louis H. Debayle for Nicaraugua; Prof. V. C. Achermann for The Netherlands; Dr. José Domywer de Olivier for Portugal; Professor de Ott for Russia; Prof. S. E. Henschen for Sweden; Dr. Feurer for Switzerland; Prof. Zoëros Pacha for Turkey, and Prof. A. C. Maggiolo for Uruguay. Prof. Lucas Championnère, the newly elected president of the International Association of the Medical Press, spoke on behalf of that body.

The General Sessions

At the general sessions addresses were delivered in plenary congress by Professor Baccelli, Rome; Dr. E. F. Bashford, London, Cancer; Prof. M. Rubner, Berlin; Professor Laveran, Paris, La Pathologie Exotique; Prof. J. Loeb, Berkeley, Cal., Artificial Parthogenesis and Its Bearing on the Physiology and Pathology of the Cell.

Dr. Bashford's address on cancer appeared in the *Medical Record*, New York, September 4, and an abstract appears in this issue of The Journal, p. 968.

The Islands of Langerhans of the Pancreas

Dr. E. Laguesse, Lille, France, described his investigations made on the body of an adult man who had been executed. He laid particular stress on the presence of a large amount of secretory material in the cells with the appearance of small, closely packed vacuoles and also of little granules, and maintained that these appearances gave the islands all the characters of a gland with an internal secretion, or "endocrine," and strictly comparable with the appearances of the parathyroids. He considered all the facts that seemed to substantiate his theory of balance (between the internal and external secretions of the pancreas), as against the theory of the perpetual independence and stability of function of the islands of Langerhans, submitting that: 1. In adults there is a demonstrable continuity between some of the islands and the acini, and more directly between the islands and the excretory ducts of the gland. 2. In certain places the mixture of the "exocrine" and "endocrine" gland elements is such as to suggest a transitory state. 3. There is to be found, on the one hand, a whole series of transition forms between the acinar and insular elements, and, on the other hand, an inverse series demonstrating the reconstruction of the acini from the islands. 4. An increase in the insular substance can be provoked experimentally at the expense of the "exocrine" parenchyma of the gland, and pathologic processes can effect the same result. 5. Recently the theory of balance in the pancreas (that is to say, the complete evolutionary cycle of the island with its return to the acinar form) has received experimental proof. In conclusion, there is an intimate connection between the two glandular elements of the pancreas, and a continual balance maintained between them by their mutual metamorphosis during the whole of life.

The Methods of Studying the Diet of the Various Classes of Society

Dr. P. Albertoni and Dr. P. Tullio, Bologna, Italy, presented a joint paper on this subject. In support of the plea of Dr. Atwater of the United States asking physiologists to adopt a uniform plan of research into the dietetic food values of the various social classes, they described the methods they themselves had employed and which they had been led to adopt in the course of a prolonged investigation into the food of the Italian peasant. They determine by direct methods the food values of a certain number of families typical of the class under investigation. During the observations the individual members of the families continue their ordinary occupations under the usual conditions. The dietetic factors are always considered in relation to the physical, moral and economic conditions of the subjects of investigation. To determine the physiologic value of any foodstuff the subjects are given their ordinary diet with the food in question added, and all the food used by them is submitted to a preliminary chemical analysis. It is important that the methods of analysis and of deduction employed by all physiologists investigating this problem should be the same.

The Preventive Treatment of Anaphylaxis

Dr. Besredka, Paris, submitted the following points: (1) Anaphylactic sequelæ can be modified but not entirely prevented by the heating of therapeutic serums to 56 C. for an hour on four days running; (2) ether, or better, alcohol narcosis (however the latter be induced, by the mouth or by hypodermic, peritoneal or rectal injection), confers a complete but transitory immunity; (3) the prophylactic injection of serum that has been heated to 80 C. confers a sure and lasting immunity which is established by slow degrees after a slight reaction; (4) the best way to prevent anaphylactic complications consists in the prophylactic rectal injection of serum, or, better still, the injection of a very small dose of the same serum under the skin, to induce the formation of an antianaphylactic substance.

The Physiologic and Therapeutic Importance of the Alkalies and the Alkaline Earths

Dr. A. Curci, Catania, Sicily, discussed the physiologic action of potassium, rubidium, cerium, thallium, sodium, lithium, calcium, strontium, barium, magnesium and beryllium. He contradicted the commonly held view that potassium is a cardiac depressant, maintaining that it stimulates the muscular elements of the heart and the vessels and strengthens its action. It has a similar action on the splanchnic muscles, as have rubidium, cerium, thallium, calcium, strontium and barium, which are all cardiovascular stimulants. Dr. Curci held that lithium was a nervous stimulant, but had no action on the muscular tissues. He stated that the alkaline earths all depressed the functions of the nervous system, but magnesium

prominent practitioner of Moorhead, Minn.; was beaten to death in that city while returning from a professional call, September 6, aged 50.

Rudolph Gmelin, M.D. University of Tübingen, Germany, 1854; a volunteer surgeon during the Franco-Prussian War, and later a practitioner of Chicago, Milwaukee, and Elkader, Iowa; died at his home in the latter city, August 3, from heart disease, aged 78.

Thomas E. James, M.D. Medical College of Virginia, Richmond, 1853; a Confederate veteran; for many years a practitioner of St. Petersburg, Fla.; died at the home of his son in Tampa Heights, Fla., August 28, from cerebral hemorrhage, aged 79.

George S. Harkness, M.D. College of Physicians and Surgeons, Chicago, 1884; for several years superintendent of the San Joaquin County Hospital, Stockton, Cal.; died at his home in Stockton, September 2, from heart disease, aged 52.

James P. Davis, M.D. Missouri Medical College, St. Louis, 1875; formerly a member of the American Medical Association; a member of the Minnesota State Medical Association; died at his home in Hammond, Minn., August 29, aged 67.

William T. Griffith (license, Ill., years of practice, 1887); for forty-six years a practitioner of Washington, Ill., and formerly coroner of Tazewell county; died at his home in Washington, September 2, from heart disease, aged 76.

Nicholas Thomas Glenn, M.D. Jefferson Medical College, Philadelphia, 1907; a member of the staff of the Philadelphia Polyclinic Hospital; died suddenly at his home in Philadelphia, September 1, from nervous breakdown, aged 27.

Albert Beach Whitney, M.D. Penn Medical University, Philadelphia, 1863; a member of the state and national eclectic medical societies and the New York Medicolegal Society; died at his home in New York City, August 30, aged 72.

Arthur A. Parker, M.D. Medical College of Ohio, Cincinnati, 1867; a veteran of the Civil War; for twenty years a practitioner of Omaha, Neb.; died at his home in Hollywood, Cal., September 1, from paralysis, aged 68.

Thomas Van Valzah Parker, M.D. Cooper Medical College, San Francisco, 1897; for twelve years surgeon of the Home for Disabled Volunteer Soldiers, Soldiers' Home, Cal.; died in that institution, August 31, aged 37.

Charles Martin Luther Wolf, M.D. Eclectic Medical Institute, Cincinnati, 1905; a member of the State Medical Association of Texas; died in his apartments in Galveston, August 30, from septicemia, aged 28.

James R. MacGuire, M.D. Chicago College of Medicine and Surgery, 1887; of West Rutland, Vt.; died in the Proctor Hospital, Rutland, August 24, after an operation for carcinoma of the stomach, aged 53.

James Howard Woodard, M.D. Eclectic Medical Institute, Cincinnati, 1886; for several terms physician of Jasper county, Mo.; died at his home in Webb City, August 16, from heat exhaustion, aged 57.

Cleveland B. Floyd, M.D. Atlanta (Ga.) Medical College, 1895; of Fairburn, Ga.; died in the Presbyterian Hospital, Atlanta, September 3, from septicemia, due to an operation wound.

Carl Ernest Kurtz, M.D. University of Pennsylvania, 1869; a member of the American Medical Association; died at his home in Chicago, September 6, from heart disease, aged 68.

S. N. Earp (registration, Okla., 1908); of Foss, Okla.; died in Oklahoma City, March 8, from the effects of carbolic acid believed to have been self-administered with suicidal intent, aged 39.

John Thomas Williamson (license, Calhoun county, Ala., 1881); an honorary member of the Medical Association of the State of Alabama; died at his home in Peek's Hill, August 31, aged 70.

John Hanly, M.D. Victoria College, Coburg, Ont., 1869; a member of the Ontario Medical Association; died at his home in Midland, Ont., August 16, 1908, from heart disease, aged 71.

James Surber Jones, M.D. University of Tennessee, Nashville, 1893; was instantly killed by a lightning stroke on his farm in Obion county, Tenn., near Rives, June 30, aged 38.

William Francis Caffrey, M.D. University of Vermont, Burlington, 1897; a member of the American Medical Association; died at his home in Westfield, Mass., September 22, aged 35.

George Christian Haller, M.D. Hahnemann Medical College, Philadelphia, 1897; of Germantown, Philadelphia; died in the Hahnemann Hospital, Philadelphia, September 5, after an operation for appendicitis, aged 37.

Joseph A. Creighton, M.D. Medical College of Ohio, Cincinnati, 1897; of Manitou, Colo.; died at the home of his brother in that city, September 2, from tuberculosis, aged 35.

Emanuel Harrison, M.D. Howard University, Washington, D. C., 1888; a colored practitioner of Wichita, Kan.; died at his home, August 26, from typhoid fever, aged 43.

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Medical Economics

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Third Year—First Month, Third Weekly Meeting

Surgery of Pleura

Empyema: Etiology, primary or secondary. Pathological changes in pleural membranes, character of exudate, Prognosis, effect of age, different micro-organisms. Treatment, indications for aspiration, incision, resection of rib, Bryant's aspiration drainage. Delayed operation, indications for Fowler's operation, "exploratory resection" of Beck, Estlander or Schede operation.

Hemothorax and Hydrothorax: Indications for surgical treatment in each.

Pneumothorax: Diagnosis and surgical treatment.

Surgery of Lungs

Abscess of Lungs: Diagnosis, value of x-ray. Treatment. Technic of incision and drainage.

Gangrene of the Lung: Symptoms and diagnosis. Indications for surgical treatment.

Pulmonary Tuberculosis: Present status of the surgical treatment.

Bronchiectasis: Indications for surgical treatment.

and beryllium had no action on the muscles. Dr. Curci advanced a theory of the action of these substances on the various systems in the animal and vegetable organisms. The second part of the paper was devoted to a consideration of the mineral salts in the tissues in health and disease. The interesting observation was made that tissues heated by an inflammatory process absorb salts and other substances more readily than when in the normal state, and this applies to substances such as sodium, which do not normally occur in the tissues. In the third section of his paper Dr. Curci considered the biologic rôle of the metals potassium, calcium and magnesium. While sodium and ammonium increase excitability in the nervous tissues, calcium and magnesium in combination with those tissues control the currents of nervous energy and offer a certain amount of resistance to the conductive power of the nerves. They are accordingly true tonics. He holds that magnesium increases the dynamic power of the nucleus, the vital center of the cell. Finally, he described the influence of the mineral salts on the nutrition and the secretions.

(To be continued)

Marriages

Irvin S. Koll, M.D., to Miss Melanie Alice Weil, both of Chicago, September 8.

Giuseppe Pasceri, M.D., to Miss Florence L. Smith, both of Philadelphia, September 1.

Aria Louis Derdiger, M.D., to Miss Ella Jane Spicker, both of Chicago, September 4.

Joseph B. Bywater, M.D., Mount Morris, Ill., to Miss Ethel Dunham, of Manchester, Iowa, recently.

Wilfred E. Blatherwick, M.D., Nashua, Iowa, to Miss Anna Evans, at Sheldon, Iowa, August 24.

Henry S. Newhart, M.D., Bangor, Pa., to Miss Helen Stockton Bennett of Trenton, N. J., August 28.

Francis A. Mantz, M.D., Philadelphia, Pa., to Miss Mabel Yule of Owen Sound, Ont., September 9.

Alexander Martin Heron, M.D., Lakewood, N. J., to Miss Caroline Madeline Bruening of Brooklyn, N. Y., recently.

Otto Worthington Ladwig, M.D., Lost Creek, W. Va., to Miss Calora Beatrice Hardway, at Lost Creek, September 1.

John Van Reed Lyman, M.D., Eau Claire, Wis., to Miss Mary Sylvester of Minneapolis, Minn., at Chicago, August 21.

George W. Newsome, M.D., Indianola, Iowa, to Miss Amanda Strickland of St. Louis, at Des Moines, Iowa, August 31.

Deaths

Stephen Holmes Weeks, M.D. University of Pennsylvania, Philadelphia, 1864; of Portland, Maine; a member of the American Medical Association; formerly president of the Maine Medical Association; a member of the American Surgical Association; emeritus professor of surgery, and formerly professor of anatomy in the Medical School of Maine, Brunswick; said to have been the first to make and use absorbable drainage tubes; one of the founders of the Maine Sanatorium for Pulmonary Diseases, Hebron, and president of the Maine Association for the Study and Prevention of Tuberculosis; from 1874-1898 surgeon to the Maine General Hospital, Portland, and since that time consulting surgeon to the institution; died in the Maine General Hospital, September 1, four days after an operation for carcinoma of the intestines, aged 73.

John Campbell Sheridan, M.D. Rush Medical College, Chicago, 1879; a member of the American Medical Association and a charter member of the Cambria County (Pa.) Medical Society; director of the Radford Street Emergency Hospital at the time of the Johnstown flood; a member of the National Association of Railway Surgeons and Baltimore and Ohio Association of Railway Surgeons; one of the incorporators of the Conemaugh Valley Memorial Hospital, and a member of its board of managers; died at his home in Johnstown, September 2, from uremia, aged 55. The Cambria County Medical Society, at a special meeting, determined as a fitting mark of respect and honor, to attend the funeral service in a body and accompany the remains to the grave.

Henry Cadwalader Chapman, M.D. University of Pennsylvania, Philadelphia, 1867; Jefferson Medical College, Philadelphia, 1878; emeritus professor of institutes of medicine and medical jurisprudence in Jefferson Medical College; fellow of the College of Physicians of Philadelphia; a member of the American Physiological Society and the American Philosophical Society; chairman of the board of curators of the Academy of Natural Sciences, Philadelphia, since 1875, and prosector of the Zoological Society of Philadelphia; author of standard textbooks on physiology and medical jurisprudence; died suddenly at his summer home near Bar Harbor, Maine, September 8, from hemorrhage of the stomach, aged 64.

Washington Akin, M.D. Albany (N. Y.) Medical College, 1858; a member of the Medical Society of the State of New York; one of the oldest and most esteemed practitioners of Troy, N. Y.; assistant surgeon of the One Hundred and Twenty-fifth New York Volunteer Infantry during the Civil War; formerly city physician of Troy, jail physician and police surgeon for several years; a member of the local board of U. S. pension examining surgeons; attending physician to the Marshall Sanitarium and Sisters' Hospital, Troy; formerly president and secretary of the Rensselaer County Medical Society; died at his home in Troy, August 29, from angina pectoris, aged 74.

Albert B. Henderson, M.D. Detroit (Mich.) Medical College, 1899; a member of the American Medical Association; a veteran of the Spanish-American War; who was commissioned as first lieutenant and assistant surgeon, U. S. Army, in 1901, and was retired on account of disability not incident to the service, June 30, 1904; for several years a resident of Albuquerque, N. M.; died in St. Joseph's Hospital, Denver, August 28, from pulmonary hemorrhage, aged 32.

George Daniel Munger, M.D. St. Louis College of Physicians and Surgeons, 1897; a member of the American Medical Association and National Association of U. S. Pension Examining Surgeons; a veteran of the Civil War; secretary of the local pension board; physician of the Oklahoma County Board of Health; and for more than twenty years a practitioner of Oklahoma City; died in Eureka Springs, Ark., September 4, from kidney disease, aged 78.

James Grier Stanton, M.D. Jefferson Medical College, Philadelphia, 1881; a member of the Delaware State Medical Society; and one of the most prominent physicians of the state; coroner of Camden county, N. J., in 1888; died at his home in Milford, Del., September 4, from the effects of gelsemium taken by mistake for gentian, aged 49.

Charles Winegar Crispell, M.D. University of Vermont, Burlington, 1883; of Kingston, N. Y.; a member of the American Medical Association; for many years assistant surgeon of the Tenth Infantry, N. G. N. Y.; bacteriologic expert for the State Board of Health; died suddenly at his summer home in Shelter Island Heights, Long Island, August 30, aged 49.

Jacob Moyer Hagey, M.D. Rush Medical College, Chicago, 1862; for many years a member of the American Medical Association; once president of the Livingston County (Ill.) Medical Society; a member of the American Public Health Association; died at his home in Mount Morris, N. Y., August 3, from cerebral hemorrhage, aged 76.

James Bordley, M.D. University of Maryland, Baltimore, 1868; president of the Maryland State Board of Medical Examiners from 1893-1896; health officer of Queen Anne County; president of the county medical society and of the Centreville National Bank; died at his home in Centreville, August 30, from arteriosclerosis, aged 63.

Markwell Seward Purdy, M.D. Chicago Homeopathic Medical College, 1884; in 1893 and 1902 health officer of Corning, N. Y.; formerly attending physician to Corning Hospital and for many years proprietor of the Highland Pines Sanitarium; died at his home in Ithaca, N. Y., July 25, from paralysis, aged 50.

James H. McCall, M.D. University of Nashville, Tenn., 1860; a leading citizen of Quitman, Ga., and for many years president of the Merchants and Farmers' Bank of that place; surgeon in the Confederate service throughout the Civil War; died at his home in West Quitman, February 15, aged 70.

Robert Jemison Hargrove, M.D. University of Alabama, Mobile, 1901; of Tuscaloosa, Ala.; a member of the Medical Association of the State of Alabama; died on his plantation near Northport, August 31, from the effects of morphin believed to have been self-administered with suicidal intent, aged 35.

Thrond S. Egge, M.D. University of Minnesota, Minneapolis, 1893; a member of the American Medical Association and a prominent practitioner of Moorhead, Minn.; was beaten to death in that city while returning from a professional call, September 6, aged 50.

Rudolph Gmelin, M.D. University of Tübingen, Germany, 1854; a volunteer surgeon during the Franco-Prussian War, and later a practitioner of Chicago, Milwaukee, and Elkader, Iowa; died at his home in the latter city, August 3, from heart disease, aged 78.

Thomas E. James, M.D. Medical College of Virginia, Richmond, 1853; a Confederate veteran; for many years a practitioner of St. Petersburg, Fla.; died at the home of his son in Tampa Heights, Fla., August 28, from cerebral hemorrhage, aged 79.

George S. Harkness, M.D. College of Physicians and Surgeons, Chicago, 1884; for several years superintendent of the San Joaquin County Hospital, Stockton, Cal.; died at his home in Stockton, September 2, from heart disease, aged 52.

James P. Davis, M.D. Missouri Medical College, St. Louis, 1875; formerly a member of the American Medical Association; a member of the Minnesota State Medical Association; died at his home in Hammond, Minn., August 29, aged 67.

William T. Griffith (license, Ill., years of practice, 1887); for forty-six years a practitioner of Washington, Ill., and formerly coroner of Tazewell county; died at his home in Washington, September 2, from heart disease, aged 76.

Nicholas Thomas Glenn, M.D. Jefferson Medical College, Philadelphia, 1907; a member of the staff of the Philadelphia Polyclinic Hospital; died suddenly at his home in Philadelphia, September 1, from nervous breakdown, aged 27.

Albert Beach Whitney, M.D. Penn Medical University, Philadelphia, 1863; a member of the state and national eclectic medical societies and the New York Medicolegal Society; died at his home in New York City, August 30, aged 72.

Arthur A. Parker, M.D. Medical College of Ohio, Cincinnati, 1867; a veteran of the Civil War; for twenty years a practitioner of Omaha, Neb.; died at his home in Hollywood, Cal., September 1, from paralysis, aged 68.

Thomas Van Valzah Parker, M.D. Cooper Medical College, San Francisco, 1897; for twelve years surgeon of the Home for Disabled Volunteer Soldiers, Soldiers' Home, Cal.; died in that institution, August 31, aged 37.

Charles Martin Luther Wolf, M.D. Eclectic Medical Institute, Cincinnati, 1905; a member of the State Medical Association of Texas; died in his apartments in Galveston, August 30, from septicemia, aged 28.

James R. MacGuire, M.D. Chicago College of Medicine and Surgery, 1887; of West Rutland, Vt.; died in the Proctor Hospital, Rutland, August 24, after an operation for carcinoma of the stomach, aged 53.

James Howard Woodard, M.D. Eclectic Medical Institute, Cincinnati, 1886; for several terms physician of Jasper county, Mo.; died at his home in Webb City, August 16, from heat exhaustion, aged 57.

Cleveland B. Floyd, M.D. Atlanta (Ga.) Medical College, 1895; of Fairburn, Ga.; died in the Presbyterian Hospital, Atlanta, September 3, from septicemia, due to an operation wound.

Carl Ernest Kurtz, M.D. University of Pennsylvania, 1869; a member of the American Medical Association; died at his home in Chicago, September 6, from heart disease, aged 68.

S. N. Earp (registration, Okla., 1908); of Foss, Okla.; died in Oklahoma City, March 8, from the effects of carbolic acid believed to have been self-administered with suicidal intent, aged 39.

John Thomas Williamson (license, Calhoun county, Ala., 1881); an honorary member of the Medical Association of the State of Alabama; died at his home in Peek's Hill, August 31, aged 70.

John Hanly, M.D. Victoria College, Coburg, Ont., 1869; a member of the Ontario Medical Association; died at his home in Midland, Ont., August 16, 1908, from heart disease, aged 71.

James Surber Jones, M.D. University of Tennessee, Nashville, 1893; was instantly killed by a lightning stroke on his farm in Obion county, Tenn., near Rives, June 30, aged 38.

William Francis Caffrey, M.D. University of Vermont, Burlington, 1897; a member of the American Medical Association; died at his home in Westfield, Mass., September 22, aged 35.

George Christian Haller, M.D. Hahnemann Medical College, Philadelphia, 1897; of Germantown, Philadelphia; died in the Hahnemann Hospital, Philadelphia, September 5, after an operation for appendicitis, aged 37.

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SURGERY OF PLEURA

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HEMOTHORAX AND HYDROTHORAX: Indications for surgical treatment in each.

PNEUMOTHORAX: Diagnosis and surgical treatment.

SURGERY OF LUNGS

ABSCESS OF LUNGS: Diagnosis, value of x-ray. Treatment. Technic of incision and drainage.

GANGRENE OF THE LUNG: Symptoms and diagnosis. Indications for surgical treatment.

PULMONARY TUBERCULOSIS: Present status of the surgical treatment.

BRONCHIECTASIS: Indications for surgical treatment.

Medicolegal

Death From Angina Pectoris After Injury—Expert Testimony and Framing Questions From Medical Works

The Supreme Court of Missouri, Division No. 1, says, in the case of MacDonald vs. Metropolitan Street Railway Co., that the tendency of the expert testimony on behalf of the plaintiff was to show that the party for whose death it was sought to recover damages suffered from angina pectoris. The plaintiff put in proof from competent physicians tending to show that angina pectoris, or the diseased condition of the heart and its appurtenant arteries and valves to which the pain so named attaches, in at least some of its phases, could naturally be caused by shock and injury and that it might be reasonably expected to gradually develop from small beginnings until it finally progressed far enough to carry its victim off. It was argued, however, that there was no evidence that the death was directly or proximately caused by the injuries sustained in the accident to which it was attributed, the argument being built up, for example, on the views that the deceased went about his labors after his injury, that physicians were unable for several months to determine the existence of heart trouble, that angina pectoris can arise from so many and different independent causes (even from undiscoverable ones) that to predicate it of his injury was mere conjecture, furnishing no legal basis for the judgment. But counsel argued ill, the court thinks, in that behalf.

Evidently the fact that the man returned, in a crippled way, to his avocation could not be conclusive. It was a circumstance, but one for the jury. The heroism of facing one's fate in civil life, like a soldier does his in war, and performing one's duty as best he can until the end comes, is not inseparable from a prior injury eventually ending one's life. Labor, under such conditions, is referable to grit and courage, or the lack of these, to temperament, duty. If he had done no work at all after his injury, that fact alone would not have made a case for the plaintiff, nor did his doing it destroy her case.

Nor does the court have to go to physicians to find that medical science has not developed to the point where a physician, however wise, can tell to a certainty whether a disease exists in the heart for one, two, three, or four months after an injury, or that such insidious diseases not uncommonly quite baffle diagnosis. It must be borne in mind, too, that physicians' theories under oath on the witness stand are merely advisory in character. Juries can take or leave that advice on the condition only that it seems reasonable or not to them; and, because physicians disagree, it is not valid reasoning to say that juries should also disagree, or should take the advice of one set as against that of another, or should throw to the winds their common sense, and, with minds littered up with conflicting medical advice, be unable to come to any agreement whatever, even as sailors, tossed to and fro by contrary winds, reach no harbor.

In this case there was substantial testimony that the party in question came to old age hale and hearty. On a certain day in October he was thrown by a derailment against the framework of a stove in a car and struck a tremendous blow. The mere visible sign of his injury at the time was not great, but it would be dealing only with the surface of things to stop with that visible sign. The controlling fact in the case (deducible from its history) was that, traceable to that injury, he was never again a well man, and that, traceable to that same injury, after a rally at the start, he went steadily down hill to his grave. A blow such as he received was shown to be a probable cause of angina pectoris. As the court sees it, there was no link out in the chain of the evidence on which the jury could rationally base their conclusion that the injury caused his death. Independent causes were suggested and conflicting theories were developed before the jury. It was for them to say which theory was the most reasonable.

In framing questions on the cross-examination of experts, counsel held in hand medical books and formulated questions from their language. The books were not read to the jury, but the jury could see that the examined read from them. This method of cross-examination was objected to, but counsel was permitted to adopt the scientific terminology of the author and put propositions to the witnesses obviously asserted by him, the jury being repeatedly cautioned that what was read from the book was not evidence and the jury should pay no attention to it; that the only thing they could consider was the evidence that fell from the lips of the witness along the line of verifying the propositions put by the examiner. It is held that there was no error in this.

It has been said in a Missouri case that it is within the discretion of the court to permit medical books to be read to the jury, but undoubtedly the better and generally accepted doctrine is that the contents of such books are not admissible as independent evidence. The grounds of exclusion have been put on, first, such evidence is not delivered under oath; second, there is no chance of cross-examining the author; third, medicine is not an exact science; physicians disagree; medical theories are subject to frequent modification and change.

But while not independent evidence—and the question is a vexed one—yet there is a legitimate use of such books, at least, on cross-examination, where the testimony has taken wide range and where skilled witnesses, testifying as experts, base their testimony on their knowledge derived from books as well as experience, as in this case. Here the defendant's counsel had notified some of his witnesses that he was appealing to, and asking his physicians to draw from, their medical knowledge running back, say 2,000 years, and which could only be preserved, if at all, in book form from the days when Socrates ordered a cock sacrificed to Esculapius, the god of medicine, and Hippocrates and Galen practiced physic in Greece and Italy. Under such circumstances the court sees no reason why counsel could not frame a proposition in medical science in the exact language of the author, and ask the witness whether he agreed to it, so long as this was done under the due guard of the cautionary instructions given by the court.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

September 4

1 *Cancer in Man and Animals. E. F. Bashford, London.
2 Yellow Fever Prophylaxis in Cuba. A. Agramonte, Havana, Cuba.
3 Intestinal Dyspepsia. M. Einhorn, New York.
4 Forensic and Clinical Aspects of Transitory Frenzy. H. C. B. Alexander, Chicago.

1. **Cancer in Man and Animals.**—Bashford, in this article read at the International Medical Congress, gives an account of the work of the Imperial Cancer Research Fund, of which he is director. The liability of all races of mankind and of all vertebrates to cancer has been established, and the experimental reproduction of carcinoma and sarcoma has become a routine laboratory procedure. This has put the investigation of cancer on a sound biologic and experimental basis, and rapid progress has been made in defining the nature of the disease. It is found that cancer is as frequent in India as in England. The Hindoos are vegetarians but the disease occurs irrespective of vegetarian diet. It also occurs in savage as well as in civilized races; yet there is no indication of any epidemic character of the disease among savage races. The commission has shown that cancer may be reproduced experimentally by inoculation. All the clinical and pathologic features of cancer were produced in animals by cell proliferation from a few cells introduced. It is now agreed that infection plays no part in the experimental transference of cancer; that it is a true transplantation of living cells. In animals, as well as man, cancer is associated with certain periods of life, being frequent as age advances. In studying the increase of cancer, Bashford states that it is found that savage nations are not suited for this investigation because of the absence of reliable vital statistics. The increase in the number of deaths from cancer in any country is not actual, but is parallel with increased accuracy in vital statistics. Statistics from hospital and from cancer censuses are fallacious, Bashford asserts, owing to inaccurate diagnosis

and other causes. There is an increase in the number of recorded cases, but this is probably not a real increase, but only an increase of records. The relative incidence of cancer on different parts of the body shows a large number invading the stomach; among females the generative and mammary organs are involved in two-fifths of fatal cases, and another two-fifths involve stomach, liver, intestines and rectum. In man they are more frequent in throat, mouth, stomach and rectum. This may be due to chronic irritation of these sites from difference in habits. The sites of predilection show the existence of endogenous factors aside from irritation, that is, innate peculiarities of the organs involved. The incidence of cancer at certain sites in different races is due to habit, and determined by external irritation. Any part of the normal covering of the body may acquire cancerous properties. This has an indirect significance only. The question of heredity is not yet settled, and many facts are opposed to the congenital origin of cancers. The cancer cells are not of embryonic nature, but highly specialized. Cancer has no analogy with any form of infective disease. In the laboratory where thousands of mice have cancer neither they nor the laboratory workers, says Bashford, have ever been known to take it. In animals there is no evidence of production by cancer of toxic products. Death is not due to these, but to the growth of the tumor and its nutrition. Cystic changes in the growth of the cancer are shown. Exacerbations of growth occur, alternating with periods of slow growth. Some parts grow slowly, others rapidly. The nature of immunity in cancer is not yet fully known.

Boston Medical and Surgical Journal

September 2

5 Surgery of the Stomach. J. B. Deaver, Philadelphia.
6 Importance of Distinguishing Simple Round Ulcers of the Duodenum from those Ulcers which Involve the Pylorus or are Above It. E. A. Codman, Boston.
7 *Presence of Tubercle Bacilli in the Blood in Tuberculosis. M. A. Dalley, Boston.
8 Desirability of Further Extension of Undergraduate Nursing Service. F. W. Patch, Farmington, Mass.
9 *Results of Mayo's Modification of Gilliam's Operation for Shortening the Round Ligaments. H. W. Baker, Rochester. Minn.
10 Studies in Psychotherapy (continued). B. Sidis, Boston.

7. **Tubercle Bacilli in the Blood.**—Bailey endeavored to confirm Rosenberger's findings. Blood from 17 patients with tuberculosis (2 with miliary and 15 with advanced tuberculosis) inoculated into guinea-pigs failed in every instance to produce the slightest evidence of the disease. Stained smears of the blood from the 17 individuals showed occasionally bodies resembling tubercle bacilli. Bailey therefore concludes (1) that the only reliable test for demonstrating tubercle bacilli is animal inoculation and the production of the characteristic tuberculous lesions with the bacilli in them; (2) that virulent tubercle bacilli are not ordinarily demonstrable in the circulating blood of tuberculous patients. Staining tests (on which Rosenberger based his arguments and conclusions) are not reliable. The results he obtains may be explained in at least three ways: (a) as attenuated tubercle bacilli; (b) as artefacts; or (c) as acid-fast bacilli of some sort introduced as a contamination in some one of the steps employed in staining, or deposited on the slide by the fingers in the process of cleaning or manipulation.

9. **Mayo's Modification of Gilliam's Operation.**—This operation is described by Baker as follows: After making a median incision, the uterus is brought up into view and the round ligaments grasped at the elective point, generally about one and one-half inch on either side of the uterus, then a pair of curved (Kelly) clamps are passed with the curved surface next to the fascia above the rectus muscle to the internal ring; here the clamps are turned, the point now being down, passed through the ring and out along the round ligament, underneath the peritoneum, to the place of election marked. Here the peritoneum is broken through and the round ligament grasped, the snap removed and the clamp pulled back, inverting the ligament on itself to the abdominal incision. After this has been repeated on the other side, the two ligaments are sutured together and the incision closed, having replaced the uterus in its normal position, being held there by its normal supports.

New York Medical Journal

September 4

11 *Value of the Test Meal in Gastric Diagnosis. C. Graham and D. Guthrie, Rochester, Minn.
12 Tuberculosis and Congestion. S. A. Knopf, New York.
13 *True versus Pseudo-Opotherapy. C. E. de M. Sajous, Philadelphia.
14 Contagious Theory of Tuberculosis. J. B. White, New York.
15 The So-Called Thymus Death. J. P. C. Griffith, Philadelphia.
16 *Prolapse of Uterus, Vagina, and Rectum. J. M. Lynch, New York.
17 Primary Tuberculosis of the Mammary Gland. W. Fuller, Chicago.
18 *Astasia-Abasia. H. Stern, New York.
19 Necessity for Routine Examination of the Rectum in Intestinal Diseases. D. H. Murray, Syracuse, N. Y.
20 Esophagoscopy in the Removal of Foreign Bodies. R. H. Johnson, Baltimore.
21 *Simple Method for Treatment of Suppurating Bubo. J. A. Murtagh, Fort McKinley, Rizal, P. I.

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Medicolegal

Death From Angina Pectoris After Injury—Expert Testimony and Framing Questions From Medical Works

The Supreme Court of Missouri, Division No. 1, says, in the case of MacDonald vs. Metropolitan Street Railway Co., that the tendency of the expert testimony on behalf of the plaintiff was to show that the party for whose death it was sought to recover damages suffered from angina pectoris. The plaintiff put in proof from competent physicians tending to show that angina pectoris, or the diseased condition of the heart and its appurtenant arteries and valves to which the pain so named attaches, in at least some of its phases, could naturally be caused by shock and injury and that it might be reasonably expected to gradually develop from small beginnings until it finally progressed far enough to carry its victim off. It was argued, however, that there was no evidence that the death was directly or proximately caused by the injuries sustained in the accident to which it was attributed, the argument being built up, for example, on the views that the deceased went about his labors after his injury, that physicians were unable for several months to determine the existence of heart trouble, that angina pectoris can arise from so many and different independent causes (even from undiscoverable ones) that to predicate it of his injury was mere conjecture, furnishing no legal basis for the judgment. But counsel argued ill, the court thinks, in that behalf.

Evidently the fact that the man returned, in a crippled way, to his avocation could not be conclusive. It was a circumstance, but one for the jury. The heroism of facing one's fate in civil life, like a soldier does his in war, and performing one's duty as best he can until the end comes, is not inseparable from a prior injury eventually ending one's life. Labor, under such conditions, is referable to grit and courage, or the lack of these, to temperament, duty. If he had done no work at all after his injury, that fact alone would not have made a case for the plaintiff, nor did his doing it destroy her case.

Nor does the court have to go to physicians to find that medical science has not developed to the point where a physician, however wise, can tell to a certainty whether a disease exists in the heart for one, two, three, or four months after an injury, or that such insidious diseases not uncommonly quite baffle diagnosis. It must be borne in mind, too, that physicians' theories under oath on the witness stand are merely advisory in character. Juries can take or leave that advice on the condition only that it seems reasonable or not to them; and, because physicians disagree, it is not valid reasoning to say that juries should also disagree, or should take the advice of one set as against that of another, or should throw to the winds their common sense, and, with minds littered up with conflicting medical advice, be unable to come to any agreement whatever, even as sailors, tossed to and fro by contrary winds, reach no harbor.

In this case there was substantial testimony that the party in question came to old age hale and hearty. On a certain day in October he was thrown by a derailment against the framework of a stove in a car and struck a tremendous blow. The mere visible sign of his injury at the time was not great, but it would be dealing only with the surface of things to stop with that visible sign. The controlling fact in the case (deducible from its history) was that, traceable to that injury, he was never again a well man, and that, traceable to that same injury, after a rally at the start, he went steadily down hill to his grave. A blow such as he received was shown to be a probable cause of angina pectoris. As the court sees it, there was no link out in the chain of the evidence on which the jury could rationally base their conclusion that the injury caused his death. Independent causes were suggested and conflicting theories were developed before the jury. It was for them to say which theory was the most reasonable.

In framing questions on the cross-examination of experts, counsel held in hand medical books and formulated questions from their language. The books were not read to the jury, but the jury could see that the examined read from them. This method of cross-examination was objected to, but counsel was permitted to adopt the scientific terminology of the author and put propositions to the witnesses obviously asserted by him, the jury being repeatedly cautioned that what was read from the book was not evidence and the jury should pay no attention to it; that the only thing they could consider was the evidence that fell from the lips of the witness along the line of verifying the propositions put by the examiner. It is held that there was no error in this.

It has been said in a Missouri case that it is within the discretion of the court to permit medical books to be read to the jury, but undoubtedly the better and generally accepted doctrine is that the contents of such books are not admissible as independent evidence. The grounds of exclusion have been put on, first, such evidence is not delivered under oath; second, there is no chance of cross-examining the author; third, medicine is not an exact science; physicians disagree; medical theories are subject to frequent modification and change.

But while not independent evidence—and the question is a vexed one—yet there is a legitimate use of such books, at least, on cross-examination, where the testimony has taken wide range and where skilled witnesses, testifying as experts, base their testimony on their knowledge derived from books as well as experience, as in this case. Here the defendant's counsel had notified some of his witnesses that he was appealing to, and asking his physicians to draw from, their medical knowledge running back, say 2,000 years, and which could only be preserved, if at all, in book form from the days when Socrates ordered a cock sacrificed to Esculapius, the god of medicine, and Hippocrates and Galen practiced physic in Greece and Italy. Under such circumstances the court sees no reason why counsel could not frame a proposition in medical science in the exact language of the author, and ask the witness whether he agreed to it, so long as this was done under the due guard of the cautionary instructions given by the court.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Medical Record, New York

September 4

1 *Cancer in Man and Animals. E. F. Bashford, London.
2 Yellow Fever Prophylaxis in Cuba. A. Agramonte, Havana, Cuba.
3 Intestinal Dyspepsia. M. Einhorn, New York.
4 Forensic and Clinical Aspects of Transitory Frenzy. H. C. B. Alexander, Chicago.

1. **Cancer in Man and Animals.**—Bashford, in this article read at the International Medical Congress, gives an account of the work of the Imperial Cancer Research Fund, of which he is director. The liability of all races of mankind and of all vertebrates to cancer has been established, and the experimental reproduction of carcinoma and sarcoma has become a routine laboratory procedure. This has put the investigation of cancer on a sound biologic and experimental basis, and rapid progress has been made in defining the nature of the disease. It is found that cancer is as frequent in India as in England. The Hindoos are vegetarians but the disease occurs irrespective of vegetarian diet. It also occurs in savage as well as in civilized races; yet there is no indication of any epidemic character of the disease among savage races. The commission has shown that cancer may be reproduced experimentally by inoculation. All the clinical and pathologic features of cancer were produced in animals by cell proliferation from a few cells introduced. It is now agreed that infection plays no part in the experimental transference of cancer; that it is a true transplantation of living cells. In animals, as well as man, cancer is associated with certain periods of life, being frequent as age advances. In studying the increase of cancer, Bashford states that it is found that savage nations are not suited for this investigation because of the absence of reliable vital statistics. The increase in the number of deaths from cancer in any country is not actual, but is parallel with increased accuracy in vital statistics. Statistics from hospital and from cancer censuses are fallacious, Bashford asserts, owing to inaccurate diagnosis

and other causes. There is an increase in the number of recorded cases, but this is probably not a real increase, but only an increase of records. The relative incidence of cancer on different parts of the body shows a large number invading the stomach; among females the generative and mammary organs are involved in two-fifths of fatal cases, and another two-fifths involve stomach, liver, intestines and rectum. In man they are more frequent in throat, mouth, stomach and rectum. This may be due to chronic irritation of these sites from difference in habits. The sites of predilection show the existence of endogenous factors aside from irritation, that is, innate peculiarities of the organs involved. The incidence of cancer at certain sites in different races is due to habit, and determined by external irritation. Any part of the normal covering of the body may acquire cancerous properties. This has an indirect significance only. The question of heredity is not yet settled, and many facts are opposed to the congenital origin of cancers. The cancer cells are not of embryonic nature, but highly specialized. Cancer has no analogy with any form of infective disease. In the laboratory where thousands of mice have cancer neither they nor the laboratory workers, says Bashford, have ever been known to take it. In animals there is no evidence of production by cancer of toxic products. Death is not due to these, but to the growth of the tumor and its nutrition. Cystic changes in the growth of the cancer are shown. Exacerbations of growth occur, alternating with periods of slow growth. Some parts grow slowly, others rapidly. The nature of immunity in cancer is not yet fully known.

Boston Medical and Surgical Journal

September 2

5 Surgery of the Stomach. J. B. Deaver, Philadelphia.
6 Importance of Distinguishing Simple Round Ulcers of the Duodenum from those Ulcers which Involve the Pylorus or are Above It. E. A. Codman, Boston.
7 *Presence of Tubercle Bacilli in the Blood in Tuberculosis. M. A. Dalley, Boston.
8 Desirability of Further Extension of Undergraduate Nursing Service. F. W. Patch, Farmington, Mass.
9 *Results of Mayo's Modification of Gilliam's Operation for Shortening the Round Ligaments. H. W. Baker, Rochester. Minn.
10 Studies in Psychotherapy (continued). B. Sidis, Boston.

7. **Tubercle Bacilli in the Blood.**—Bailey endeavored to confirm Rosenberger's findings. Blood from 17 patients with tuberculosis (2 with miliary and 15 with advanced tuberculosis) inoculated into guinea-pigs failed in every instance to produce the slightest evidence of the disease. Stained smears of the blood from the 17 individuals showed occasionally bodies resembling tubercle bacilli. Bailey therefore concludes (1) that the only reliable test for demonstrating tubercle bacilli is animal inoculation and the production of the characteristic tuberculous lesions with the bacilli in them; (2) that virulent tubercle bacilli are not ordinarily demonstrable in the circulating blood of tuberculous patients. Staining tests (on which Rosenberger based his arguments and conclusions) are not reliable. The results he obtains may be explained in at least three ways: (a) as attenuated tubercle bacilli; (b) as artefacts; or (c) as acid-fast bacilli of some sort introduced as a contamination in some one of the steps employed in staining, or deposited on the slide by the fingers in the process of cleaning or manipulation.

9. **Mayo's Modification of Gilliam's Operation.**—This operation is described by Baker as follows: After making a median incision, the uterus is brought up into view and the round ligaments grasped at the elective point, generally about one and one-half inch on either side of the uterus, then a pair of curved (Kelly) clamps are passed with the curved surface next to the fascia above the rectus muscle to the internal ring; here the clamps are turned, the point now being down, passed through the ring and out along the round ligament, underneath the peritoneum, to the place of election marked. Here the peritoneum is broken through and the round ligament grasped, the snap removed and the clamp pulled back, inverting the ligament on itself to the abdominal incision. After this has been repeated on the other side, the two ligaments are sutured together and the incision closed, having replaced the uterus in its normal position, being held there by its normal supports.

New York Medical Journal

September 4

11 *Value of the Test Meal in Gastric Diagnosis. C. Graham and D. Guthrie, Rochester, Minn.
12 Tuberculosis and Congestion. S. A. Knopf, New York.
13 *True versus Pseudo-Opotherapy. C. E. de M. Sajous, Philadelphia.
14 Contagious Theory of Tuberculosis. J. B. White, New York.
15 The So-Called Thymus Death. J. P. C. Griffith, Philadelphia.
16 *Prolapse of Uterus, Vagina, and Rectum. J. M. Lynch, New York.
17 Primary Tuberculosis of the Mammary Gland. W. Fuller, Chicago.
18 *Astasia-Abasia. H. Stern, New York.
19 Necessity for Routine Examination of the Rectum in Intestinal Diseases. D. H. Murray, Syracuse, N. Y.
20 Esophagoscopy in the Removal of Foreign Bodies. R. H. Johnson, Baltimore.
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include all portions of the gland and adjacent glands in close proximity to the infected gland. The thorough irrigation of this subcutaneous glandular cavity with a 1 in 2,000 bichlorid solution completes the operation as far as the removal of the diseased glandular tissue is concerned. More or less hemorrhagic oozing may be present after this, but it is almost completely checked by the injection into the cavity of a small quantity of hydrogen peroxid, which is not allowed to remain and distend the cavity, but is promptly removed by thorough irrigation with sterile water.

After repeated expression by pressure of bloody liquid that may appear at the lips of the wound, the operation is completed by the filling of the cavity by injection of a 10 per cent. iodoform emulsion in petrolatum. A firm compress with a generous dressing is then applied and retained by a spica bandage; the patient is returned to bed where he remains for at least three days, when he may be allowed to move about. The dressing is renewed in about the same interval, and as often as may be required later on account of the slight discharge which may appear for several days after the operation. At subsequent dressings it may be required that the cavity be refilled by the iodoform petrolatum emulsion.

The average length of time required by this treatment for restoration to duty has been about twelve and one-half days. These figures are based on a series of 150 patients treated by Captain Keller during his service at Fort William McKinley, Rizal, P. I., and over 50 patients treated by Murtagh in a period of four months succeeding Captain Keller's departure from this station.

Lancet-Clinic, Cincinnati

August 28

22 Surgery of Harelip and Cleft Palate. B. M. Ricketts, Cincinnati.
23 Intestinal Obstruction. H. H. Hines, Cincinnati.

Northwestern Lancet, Minneapolis

August 1

24 Abdominal Emergencies. H. B. Sweetser, Minneapolis.
25 Physician's Investments: Farm Mortgages. A. E. Dickey, Minneapolis.
26 Medical Edinburgh. S. P. Rees, Minneapolis.
27 An Apparently New Disease. W. E. Clark, Frederick, S. D.
28 The Kelly Pad as an Adjuvant in the Treatment of Gastrointestinal Disorders. J. T. Leland, Herman, Minn.

August 15

29 *Plea for the Systematic and Universal Examination of School Children's Eyes, Ears, Noses and Throats. F. Allport, Chicago.
30 Physicians' Investments: Bonds and Mortgages. M. W. Matteson, St. Paul.
31 Indications for Removal of the Middle Turbinate. J. G. Parsons, Sioux Falls, S. D.
32 *Advance in Anesthetic Technic, as Practiced at the Sisters Hospital, Hot Springs. W. J. McRoberts, Hot Springs, S. D.
33 Frostbite and its Treatment. A. Kuhlmann, Melrose, Minn.
34 Undescended Testicle Complicated with Appendicitis. C. J. Holman, Mankato, Minn.

29. Published in *Hygiene and Physical Education*, May, 1909.

32. **Advance in Anesthetic Technic.**—In the operating-room of the Sisters' Hospital at Hot Springs, S. D., there has been developed a method and technic which, according to McRoberts, is radically different from that in use elsewhere. The mask is of the Allis type and dimensions, improvised from sulphite fiber covered with zinc oxid plaster, and has the Allis face-piece of rubber, a floor of wire on which are placed some layers of gauze. At its narrow end is inserted an electric-light socket, with an extension cord to the electric-light current. Within the mask is placed a 16 candle-power incandescent globe covered with several layers of gauze. The top of the mask is covered with dentists' rubber-dam tissue, in which is cut an opening about the size of a silver quarter.

The anesthesia is begun with chloroform. The current is turned on with the mask about three inches from the patient's face. The drop method is used and continued until the patient acknowledges sleepiness, which is usually in from three to five minutes; then ether is substituted for the chloroform. The ether can is not opened in the usual manner; it is merely punctured with the point of a needle and from this comparatively infinitesimal aperture the ether is forced out by the heat of the hand, and sprayed on the gauze over the light, whose heat so rapidly volatilizes the ether that in from three to seven minutes more operative anesthesia is secured without any struggling sense of suffocation, or hypersecretion of saliva or bronchial mucus. The advantages of this method of anesthesia are said to be (1) lessened amount of anesthetic; (2) absence of the danger of ether pneumonia, due to the chilling of the lung tissue; (3) absence of kidney complications because of the very small quantity of anesthetic to be eliminated through this channel; (4) almost total absence of postoperative nausea and vomiting; (5) total absence of a hypersecretion of saliva and bronchial mucus; (6) freedom from excitement.

Buffalo Medical Journal

August

35 The Poise of Scholarship. H. R. Hopkins, New York.
36 Two Cases of Brain Tumor. H. P. Frost, Buffalo.
37 Chronic Cholecystitis. H. M. Spofford, Batavia, N. Y.

Surgery, Gynecology and Obstetrics, Chicago

August

38 *Surgical Treatment of a Most Frequent Cause of Dysmenorrhea and Sterility in Women. S. Pozzi, Paris, France.
39 *Habitual Dislocation of Patella. F. E. Bunts, Cleveland, Ohio.
40 *Case of Kraurosis. J. Frank, Chicago.
41 Primary Ovarian Pregnancy; Report of Case Combined with Extrauterine Pregnancy. C. C. Norris, Philadelphia.
42 Obstruction of the Intestines. T. C. Witherspoon, Butte, Mont.
43 Principles of Intestinal Suturing. F. G. Connell, Oshkosh, Wis.
44 *Colics of the Appendix. W. Van Hook, Chicago.
45 *Treatment of Tetanus. W. Hessert, Chicago.
46 Diaphragmatic Hernia. E. H. Beckman, Rochester, Minn.
47 *Submucous Lipoma of Gastrointestinal Tract. D. Stetten, New York.
48 *Modern Operative Treatment of Fractures of Patella. A. P. Heineck, Chicago.
49 *Two Umbilical Tumors of Probable Uterine Origin. S. W. Goddard, Brockton, Mass.
50 *Plastic Tuberculous Peritonitis. C. H. Parkes, Chicago.
51 Practical Points in Application of the Bismuth Paste in Chronic Suppurative Diseases. E. G. Beck, Chicago.
52 Diffuse Suppurative Appendicitis versus General Peritonitis. C. E. Humiston, Chicago.

38. Abstracted in The Journal, May 15, 1909, p. 1615.

39. **Habitual Dislocation of Patella.**—Bunts' case was an extremely aggravated one, and rendered the patient practically helpless without crutches and only able to follow such occupations as might be performed in the sitting posture. The operation performed consisted of: (1) A linear incision of 6 inches on the inner side of the knee, through the skin and subcutaneous tissue down to the capsule of the joint; (2) a curved incision through the capsule; (3) overlapping of the cut edges of the capsule by pulling the inferior margin under the superior margin by mattress sutures while the patella was shoved forcibly inward; (4) suturing of the free edges of the capsule to the lower portion of capsule; (5) closure of wound without drainage; (6) sterile dressings and plaster bandage, which were allowed to remain on for four weeks. Both knees were operated on at the same time and repair without infection followed in both. In general, the method was the same as that in the Mayo operation for umbilical hernia. The final results have been only partly satisfactory. The patient is able to walk without crutches. The left knee has remained cured up to this time, but she has had several attacks of pain in her right knee.

40. **Kraurosis.**—In Frank's case complete excision of the diseased skin was productive of complete relief from all symptoms.

44. **Colics of the Appendix.**—The causes of colics of the appendix are always due to some form of obstruction. When a diagnosis of colic of the appendix has been made it is wise to remove the obstruction inasmuch as recurring attacks are likely, sooner or later, to be associated with infection, when, of course, true appendicitis is to be diagnosticated. Indeed, many cases of appendicitis can, by a little inquiry, be found to have been long preceded by recurring attacks of slight colic. In these cases of colic, it is never safe to diagnosticate the presence of a stone or of adhesions. It is wise to recognize that a slight obstruction is always present; furthermore, that this obstruction in many instances will not be found by inspecting the appendix. But the most important thing is that the removal of the appendix does away with the disease and leaves the patient again in health.

45. **Treatment of Tetanus.**—Hessert reports 15 cases; acute cases, 10; mortality, 90 per cent.; chronic cases, 5; mortality, 20 per cent.; total cases, 15; mortality, 55 per cent. The series includes cases in which the patients were treated med-

ically, with antitoxin subcutaneously, with antitoxin intraneurally, and with spinal injections of magnesium sulphate. He concludes that prophylactic injections of antitetanic serum in cases of suspicious wounds are unquestionably of great value in preventing the development of tetanus. After the onset of the disease the local treatment of the wound, aside from the usual antiseptic measures, should include the use of balsam of Peru, a remedy which has been shown to possess some antagonistic action on the tetanus toxin. None of the many special methods of injecting the antitoxin has proved of value, and some of them are too dangerous for general use. Subcutaneous injections of serum in massive doses will yield equally good, if not better results. Spinal injections of magnesium sulphate solution, by eliminating the spasms, will tide many a patient on to recovery who would die under any form of serotherapy alone. This form of treatment. Hessert thinks, is destined to lower the death rate from tetanus more appreciably than anything which has been advanced heretofore, including the discovery of the specific serum. Great care should be exercised in deciding the dosage.

47. **Submucous Lipoma of Gastrointestinal Tract.**—Stetten reports two personal cases in which a successful operation was done, and reviews 75 additional cases recorded in the literature. One of his cases was a large, lobulated, polypoid, submucous lipoma of the ileum producing chronic ileocecal intussusception and intermittently protruding at the anus. Laparotomy, Maunsell resection and anastomosis, was followed by recovery. The second case was one of sessile, submucous lipoma of the transverse colon. Resection and end-to-end anastomosis were followed by recovery.

48. **Fractures of Patella.**—Heineck's paper is a most exhaustive exposition of the entire subject of fracture of the patella, presenting in the main an analytic review of over 1,100 recorded cases treated during the last ten years by the open operative method. He also considers congenital dislocation of the patella, traumatic rupture of the quadriceps extensor tendon, and of the ligamentum patellæ. The length and nature of the article prohibit abstracting.

49. **Umbilical Tumors of Uterine Origin.**—A year previously, during a catamenial period, the patient noted some redness and tenderness about the umbilicus; two months later at a similar time a small tumor appeared in the abdominal wall close to the umbilicus. This tumor increased in size but slightly and most of the increase came in the two weeks just preceding her admission to the hospital. The tenderness and pain which at first were evident only during the menstrual periods had been constant for some months though most marked just before, during, and for a week after menstruation. About and including the umbilicus was a rather deep-seated spherical, slightly tender, fixed mass of rather firm consistency and about 2 cm. in diameter. In the navel itself was a thin, yellowish crust; a sinus could not be demonstrated; the skin over the tumor was not red. Examination of the abdomen was otherwise negative. Examination *per vaginam* showed only vaginismus and a moderately retroverted uterus. The growth was excised (including the navel) with a portion of the adjacent peritoneum and sheath of the rectus muscle. The former was not involved in the growth; to the latter the growth was adherent. The convalescence was without note and the patient was free from recurrence one year after operation. The second patient had a slight bloody discharge from the navel without pain or tenderness with each menstruation. Independent of the umbilical disorder she had had in the past three years attacks of sharp pain beneath the right costal border accompanied by vomiting, chills and jaundice. At the umbilicus was a small, irregularly shaped papillomatous tumor, 2 cm. in diameter, with three distinct projections covered with normal appearing skin. At the top of the largest projection was a pin-hole opening capped with dried blood. The tumor was soft, freely movable, not tender and apparently superficial. The tumor was confined to the skin and fat outside the aponeurosis. The peritoneal cavity was opened, and the gall-bladder and stomach regions were explored; these were found normal. Convalescence was uneventful except for the development of malaria. One and a half years later there was no recurrence.

So far as can be detected by the microscope the same histologic structure appears in both tumors. Furthermore, the clinical picture of one closely resembles that of the other, and though there is no way of proving absolutely their precise nature and origin, both clinical and histologic facts point strongly to misplaced uterine tissue as their common starting point. The type of gland formation, the tall columnar ciliated epithelium, supported by a cellular submucous layer, in which are numerous clusters of red blood cells, and the presence of blood in the lumina of the alveoli, are all very suggestive of uterine tissue. Although the tumors in either case did not manifest themselves till middle life, the author believes it is safe to assume that they are the recent development of embryonic remains.

50. **Plastic Tuberculous Peritonitis.**—While dissecting a cadaver, Parkes found a mass in the left side of the abdomen extending up under the diaphragm to about the level of the tenth rib above, and below to the level of the anterior superior spine of the ilium, on the left side to the abdominal wall and on the right to the bodies of the vertebræ. By inspection the mass was found to be about the size of an ordinary stomach and, in fact, at first seemed to be the stomach in an abnormal location. The surface was glistening, smooth, and, to the naked eye, entirely free from tubercles. There were irregularities over all, and these appeared like coils of intestines within a large, thin hernial sac. The mass was somewhat movable, but on closer examination was found to be adherent to the left and the posterior abdominal wall. Above, it seemed to lose itself in the transverse mesocolon, entirely obliterating the fossæ around the duodenojejunal junction; below it was free and intact, except at a point where the inferior mesenteric artery presented itself. At this point there was a foramen about three-fourths of an inch in diameter, through which escaped the ileum. From this point to the ileocecal junction there remained about one foot of the ileum, free in the abdominal cavity. Above the mass, and resting on it, part of the jejunum was plainly seen, and later, on careful dissection, this portion of the intestine was found to enter the mass from above.

On incising the sac it was found to consist of three distinct layers, easily separable and joined together by fine friable filaments of connective tissue, as if the layers had been glued together by exudate, the serum having become absorbed. Inside of the sac were found all the small intestines, except the duodenum and the upper three inches of the jejunum and about the last twelve inches of the ileum. The intestinal loops within the sac were free from adhesions and also microscopically free from tubercles or nodules of any kind; the mesentery was entirely intact and normal, except that at one or two points there were a few miliary tubercles. Under the peritoneum could be palpated small gland-like nodules about the size of a pea. These nodules on section and microscopic examination proved to be retroperitoneal lymph glands which showed a marked round-cell infiltration, abundant leucocytes and many distinct tubercles with giant-cell formation. A piece of the sac itself was sectioned and the slide under the microscope showed well-organized connective tissue with scattered leucocytes, and endothelial cells coating both inner and outer sides.

Illinois Medical Journal, Springfield

August

53 *Diagnosis and Differential Diagnosis of Gastric Ulcer. C. Graham, Rochester, Minn.
54 *Surgical Treatment of Non-Perforative Gastric Ulcers. A. J. Ochsner, Chicago.
55 *Surgical Treatment of Perforating Gastric and Duodenal Ulcer. Report of Case. Recovery. J. E. Allaben, Rockford, Ill.
56 Prognosis of Valvular Heart Lesions. E. K. Kerr, Chicago.
57 Muscular Power in Tenotomy and Tenoplasty. A. Steindler, Chicago.
58 Immunity. W. C. Bouton, Waukegan.
59 *Directions Given the Patient after Tonsil Operation, Including Treatment of Postoperative Hemorrhage. E. Pynchon, Chicago.
60 *Early Immunization, Essential Function of the Tonsil. R. H. Good, Chicago.
61 Treatment of Gonorrhea in Young Girls. R. Vail and M. C. Lincoln, Chicago.
62 Diagnosis of Syphilitic Eye Lesions by Means of *Spirochæta pallida* and the Seroreaction of Wassermann. B. C. Corbus, Chicago.

53, 54, 55. Abstracted in The Journal, June 12, 1909, p. 1952.

59. Published in the *Virginia Medical Semi-Monthly*, May 21, 1909, and in the *Laryngoscope*, June, 1909.

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65, 66, 68. Abstracted in The Journal, May 1, 1909, pp. 1451, 1452.

St. Paul Medical Journal

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76 *Bl[illegible] with Special Reference to Ophthalmia Neonatorum. L. Stricker, Cincinnati.
77 Progress in Proctology. G. B. Evans, Dayton.

73. Abstracted in The Journal, June 5, 1909, p. 1873.

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103 Relapsing Fever of Panama. S. T. Darling, Ancon, Canal Zone.
104 Stokes-Adams Disease. T. B. Barringer, New York.

100. **Glandular Fever.**—Burns reports 9 cases. The first 6 occurred in children from 2½ to 5 years of age. The last 3 occurred in the family of Patient 6 after she had left the hospital, and, though not seen in the acute stage, are reported because the clinical history corresponded. In this family epidemic only adults were affected. The cases reported occurred in February and March, and first appeared two months after the children's ward had been isolated on account of the measles, scarlet fever and diphtheria in the city. The first case began on February 15, the second on February 16, the next two on February 17, and the last two on February 18. The first case in the family of Patient 6 developed twenty-four hours after the child had reached home. Her mother was the first member of the family affected; none of the family had seen the child for two and a half months previously. From this one would conclude that the incubation period could be as short as 24 hours, although most writers think it is from 7 to 9 days. All the patients showed a leucocytosis of from 18,000 to 26,400 during the disease.

102. **Tubercle Bacilli in Circulating Blood.**—Schroeder and Cotton attempted to confirm Rosenberger's findings that tuberculosis is always a bacteriemia. Their tests were made entirely with the blood of tuberculous cattle. In every case the blood was drawn from the jugular vein of the tuberculous animal and injected in its fresh, naturally warm state into the peritoneal cavity of a guinea-pig. The total number of cattle from which the blood injections were made is 42, and these represent a considerable variety relative to the severity and extent of the tuberculous disease with which they are affected, from animals that would not have been suspected to be diseased without a tuberculin test to a cow so badly affected that a calf of which she became the mother, a little less than a year before her blood was used for guinea-pig injections, was born affected with tuberculosis contracted from antepartum exposure to her tuberculous body. The total number of guinea-pigs injected was 104. Of these 16 died within a few days after the injection and no doubt as a result of it, 3 died of intercurrent affections, but not until a sufficient period of time had passed for lesions of tuberculosis to become clearly manifest, and 85 guinea-pigs lived until they were killed after a lapse of from seven and one-half to eleven weeks, or an average for all of seventy days after they were injected. The 3 guinea-pigs that died of intercurrent affections showed no lesions of tuberculosis on postmortem examination, and 84 of the 85 guinea-pigs that lived until they were killed showed no lesions of any kind on autopsy. One guinea-pig of the 85 showed lesions very slightly resembling tuberculosis, but these were proved by microscopic examinations and guinea-pig inoculation tests to be free from tubercle bacilli.

The authors failed utterly to find tubercle bacilli in the blood of tuberculous cattle which were examined microscopically in accordance with the method described and used by Dr. Rosenberger. The negative results of the microscopic examinations are confirmed by the negative results obtained with 88 guinea-pigs, each of which received an intra-abdominal injection of blood from a tuberculous cow or bull. As the number of cattle from which blood was injected into the 88 guinea-pigs is 42, and as these cattle represented practically all stages of tuberculosis, from mildly affected, recent cases to old and completely generalized cases, the authors feel that the work shows beyond the remotest doubt that tuberculosis is not to be classified in any sense of the word as a bacteriemia. They criticize Rosenberger's method.

Ophthalmology, Seattle, Wash.

July

105 Amblyopia ex Anopsia—Its Nature and Treatment. A. A. Bradburne, Southport, Eng.
106 Restoration of Vision in Strabismus. A. A. Bradburne, Southport, Eng.
107 *Metastatic Carcinoma of the Chorioid. G. F. Suker, and L. N. Grosvenor, Chicago.
108 Industrial Eye Injuries. W. Johnston, Spokane, Wash.
109 Tuberculous Iridocyclitis with Organized Exudate in the Anterior Chamber. J. W. Stirling, Montreal, Can.
110 Metastatic Gonorrheal Conjunctivitis. Demonstration of Gonococcus in Smears and Culture. H. McKee, Montreal, Can.
111 *Clinical and Pathologic Study of Transferred Ophthalmitis. C. A. Oliver, Philadelphia.
112 Nodular Opacities of Cornea. W. Zentmayer, Philadelphia.
113 Eye Changes in Chronic Lead Poisoning; Report of a Case. E. W. Alexander, San Francisco.
114 Collapse of the Sclerotic During Cataract Extraction. R. P. O'Connor, U. S. Army.
115 Refraction for Men who Shoot. J. N. Reeve, Washington, D. C.
116 *Hyperchlorhydria and Amblyopia. D. J. Maloney, Waterbury, Conn.

107. **Carcinoma of Chorioid.**—The conclusions drawn by Suker and Grosvenor from a study of 64 cases of metastatic chorioidal carcinoma, are as follows: (1) It does not occur before the age of puberty, usually between 30 and 60, nor directly thereafter; (2) the invariable presence of a primary carcinoma in some other organ; (3) the great tendency for bilaterality; (4) exceedingly rapid loss of vision; (5) the uniformity in the lodgment of the embolus in the ciliary arteries; (6) the uniformity in its character of growth; (7) the short duration of life after its appearance in the eye; (8) the rapidity of its growth along paths of least resistance; (9) the rarity of perforation of the globe; (10) the rarity of epibulbar tumors; (11) the practical immunity of the papilla for its first appearance; (12) the extensive detachment of the retina; (13) the relatively large percentage of minus tension; (14) the great tendency of having the three types of carcinoma represented in the same individual tumor—scirrhus, medullary and adenomatous; (15) the proneness of direct involvement of the blood vessels; (16) the rarity of invasion of the retina and disc by the tumor cells, either by extension or tertiary metastasis; (17) the seeming regularity with which the tumor encircles the disc; (18) the numerous areas of necrosis and hemorrhages; (19) the characteristics in general being opposite to those of sarcoma.

111. **Transferred Ophthalmitis.**—The patient in Oliver's case was struck in the right eye with a piece of steel. There was a small jagged wound situated in the inferior temporal quadrant of the eyeball, through which some blood and vitreous humor were oozing. Vision was reduced to light perception throughout a large and well-shaped field. The fellow eye was normal in every respect. The parts were immediately cleansed, atropin was instilled and a foreign body removed (a minute piece of steel) from the interior of the organ, through the original wound of entrance, by the hand magnet of Parker. A compress bandage was applied and treatment was continued. One week later, the external wound was healed. In three weeks' time the injured eye was practically well, and the fellow eye seemed normal in every respect and functionated properly. Two months later the patient returned, com-

53, 54, 55. Abstracted in The Journal, June 12, 1909, p. 1952.

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102 *Tests for Tubercle Bacilli in the Circulating Blood. E. C. Schroeder, and W. E. Cotton, Bethesda, Md.
103 Relapsing Fever of Panama. S. T. Darling, Ancon, Canal Zone.
104 Stokes-Adams Disease. T. B. Barringer, New York.

100. **Glandular Fever.**—Burns reports 9 cases. The first 6 occurred in children from 2½ to 5 years of age. The last 3 occurred in the family of Patient 6 after she had left the hospital, and, though not seen in the acute stage, are reported because the clinical history corresponded. In this family epidemic only adults were affected. The cases reported occurred in February and March, and first appeared two months after the children's ward had been isolated on account of the measles, scarlet fever and diphtheria in the city. The first case began on February 15, the second on February 16, the next two on February 17, and the last two on February 18. The first case in the family of Patient 6 developed twenty-four hours after the child had reached home. Her mother was the first member of the family affected; none of the family had seen the child for two and a half months previously. From this one would conclude that the incubation period could be as short as 24 hours, although most writers think it is from 7 to 9 days. All the patients showed a leucocytosis of from 18,000 to 26,400 during the disease.

102. **Tubercle Bacilli in Circulating Blood.**—Schroeder and Cotton attempted to confirm Rosenberger's findings that tuberculosis is always a bacteriemia. Their tests were made entirely with the blood of tuberculous cattle. In every case the blood was drawn from the jugular vein of the tuberculous animal and injected in its fresh, naturally warm state into the peritoneal cavity of a guinea-pig. The total number of cattle from which the blood injections were made is 42, and these represent a considerable variety relative to the severity and extent of the tuberculous disease with which they are affected, from animals that would not have been suspected to be diseased without a tuberculin test to a cow so badly affected that a calf of which she became the mother, a little less than a year before her blood was used for guinea-pig injections, was born affected with tuberculosis contracted from antepartum exposure to her tuberculous body. The total number of guinea-pigs injected was 104. Of these 16 died within a few days after the injection and no doubt as a result of it, 3 died of intercurrent affections, but not until a sufficient period of time had passed for lesions of tuberculosis to become clearly manifest, and 85 guinea-pigs lived until they were killed after a lapse of from seven and one-half to eleven weeks, or an average for all of seventy days after they were injected. The 3 guinea-pigs that died of intercurrent affections showed no lesions of tuberculosis on postmortem examination, and 84 of the 85 guinea-pigs that lived until they were killed showed no lesions of any kind on autopsy. One guinea-pig of the 85 showed lesions very slightly resembling tuberculosis, but these were proved by microscopic examinations and guinea-pig inoculation tests to be free from tubercle bacilli.

The authors failed utterly to find tubercle bacilli in the blood of tuberculous cattle which were examined microscopically in accordance with the method described and used by Dr. Rosenberger. The negative results of the microscopic examinations are confirmed by the negative results obtained with 88 guinea-pigs, each of which received an intra-abdominal injection of blood from a tuberculous cow or bull. As the number of cattle from which blood was injected into the 88 guinea-pigs is 42, and as these cattle represented practically all stages of tuberculosis, from mildly affected, recent cases to old and completely generalized cases, the authors feel that the work shows beyond the remotest doubt that tuberculosis is not to be classified in any sense of the word as a bacteriemia. They criticize Rosenberger's method.

Ophthalmology, Seattle, Wash.

July

105 Amblyopia ex Anopsia—Its Nature and Treatment. A. A. Bradburne, Southport, Eng.
106 Restoration of Vision in Strabismus. A. A. Bradburne, Southport, Eng.
107 *Metastatic Carcinoma of the Chorioid. G. F. Suker, *and L.* N. Grosvenor, Chicago.
108 Industrial Eye Injuries. W. Johnston, Spokane, Wash.
109 Tuberculous Iridocyclitis with Organized Exudate in the Anterior Chamber. J. W. Stirling, Montreal, Can.
110 Metastatic Gonorrheal Conjunctivitis. Demonstration of Gonococcus in Smears and Culture. H. McKee, Montreal, Can.
111 *Clinical and Pathologic Study of Transferred Ophthalmitis. C. A. Oliver, Philadelphia.
112 Nodular Opacities of Cornea. W. Zentmayer, Philadelphia.
113 Eye Changes in Chronic Lead Poisoning; Report of a Case. E. W. Alexander, San Francisco.
114 Collapse of the Sclerotic During Cataract Extraction. R. P. O'Connor, U. S. Army.
115 Refraction for Men who Shoot. J. N. Reeve, Washington, D. C.
116 *Hyperchlorhydria and Amblyopia. D. J. Maloney, Waterbury, Conn.

107. **Carcinoma of Chorioid.**—The conclusions drawn by Suker and Grosvenor from a study of 64 cases of metastatic chorioidal carcinoma, are as follows: (1) It does not occur before the age of puberty, usually between 30 and 60, nor directly thereafter; (2) the invariable presence of a primary carcinoma in some other organ; (3) the great tendency for bilaterality; (4) exceedingly rapid loss of vision; (5) the uniformity in the lodgment of the embolus in the ciliary arteries; (6) the uniformity in its character of growth; (7) the short duration of life after its appearance in the eye; (8) the rapidity of its growth along paths of least resistance; (9) the rarity of perforation of the globe; (10) the rarity of epibulbar tumors; (11) the practical immunity of the papilla for its first appearance; (12) the extensive detachment of the retina; (13) the relatively large percentage of minus tension; (14) the great tendency of having the three types of carcinoma represented in the same individual tumor—scirrhus, medullary and adenomatous; (15) the proneness of direct involvement of the blood vessels; (16) the rarity of invasion of the retina and disc by the tumor cells, either by extension or tertiary metastasis; (17) the seeming regularity with which the tumor encircles the disc; (18) the numerous areas of necrosis and hemorrhages; (19) the characteristics in general being opposite to those of sarcoma.

111. **Transferred Ophthalmitis.**—The patient in Oliver's case was struck in the right eye with a piece of steel. There was a small jagged wound situated in the inferior temporal quadrant of the eyeball, through which some blood and vitreous humor were oozing. Vision was reduced to light perception throughout a large and well-shaped field. The fellow eye was normal in every respect. The parts were immediately cleansed, atropin was instilled and a foreign body removed (a minute piece of steel) from the interior of the organ, through the original wound of entrance, by the hand magnet of Parker. A compress bandage was applied and treatment was continued. One week later, the external wound was healed. In three weeks' time the injured eye was practically well, and the fellow eye seemed normal in every respect and functionated properly. Two months later the patient returned, com-

plaining of pain in the previously injured right eye, this having appeared without assignable cause.

The organ was extremely tender to touch. There was intense ciliary injection, with marked hyperemia. The lens was cataractous, and the rest of the media were so hazy that it was impossible to obtain any more than the faintest red reflex from the fundus. The left eye was irritable; vision was slightly lowered; accommodation was disturbed; the media were somewhat hazy, and the fundus was rather indistinct. There was no injection and the eyeball was not tender. The right eyeball was removed, giving instant relief to the gross symptoms, and allowing the fellow eye, under appropriate treatment, to return rapidly to its original normal condition and proper functioning. Oliver regards the case of interest for several reasons: The immediate removal of the foreign body; the primary non-involvement of the ciliary region in the accident; the very early recognition of the first appearance of the transfer of the disease process; the rapid disappearance of the transferred condition by the employment of appropriate medical therapy; the constantly sustained continuance of therapeutic measures to the very time of enucleation of the offending organ; the one coarse exacerbation which so happily proved to be the warning before the secondarily affected eye had passed the danger line; the immediate cessation of all of the coarse signs and symptoms after the enucleation; the quick and happy recovery from the slight, though fully recognized secondary condition by appropriate treatment, after the primarily affected eye had been removed; and the proof of the lesson that it is always best to remove an offending eyeball the moment that its good fellow is involved to the slightest degree.

116. **Hyperchlorhydria and Amblyopia.**—Maloney records a case in which hyperchlorhydria was primarily the cause of the amblyopia. The resultant decomposed foods and gases acting on the vasomotor system and through this affecting the visual center, were the secondary and direct cause.

American Journal of Physiology, Boston

August

117 Hydrolysis of Ox Muscle. T. B. Osborne and D. B. Jones, New Haven, Conn.
118 Rates of Digestion in Cold-Bl[illegible] fluence of Season and Tempera[illegible]
119 [illegible] tile [illegible] ring [illegible] Sugar and of Magnesium Chlorid. Mass.
120 [illegible] with Sudan III. L. B. Mendel, [illegible]

American Journal of Surgery, New York

August

121 *Pruritus A[illegible] [illegible], New York.
122 Accidents [illegible] Operations. S. M. Brickner, [illegible]
123 Utility of [illegible] on, Chicago.
124 Surgical Treatment of Retrodisplacements of the Uterus. C. A. Stewart, Duluth, Minn.
125 Fractures of the Radial Shaft. Rotation Deformity (Occurrence and Diagnosis) and Aluminum Plates. W. S. Thomas, New York.

121. **Pruritus Ani.**—Humphreys removes a portion of skin and mucous membrane when pruritus ani exists without piles, the remaining skin being elevated or separated from subjacent tissues, so as to destroy as much as possible the nerve supply. This operation takes away all the diseased skin, except two strips from three-eighths to one-half inch wide, selected where the tissue seemed to be least diseased. The outer limit of the incision begins from one to one and a half inches from the anus, but this is dissected up so as to include the columns or crypts of Morgagni when there is thickening or abnormality of these. This operation is a compromise between the procedures of Matthews and Ball. All the skin is not removed, so there need be no fear of stricture resulting. All the diseased skin not being left there is reason to believe that should the itching recur it would not be so troublesome as before. Another feature is that the remaining strips of skin are stretched and thinned out by cicatricial contraction at the site of the resected portion. When the sphincter is much hypertrophied a medium incision was made posteriorly, thus cutting the few transverse fibers and separating the longitudinal fibers of the external sphincter for one inch posterior to the anal margin. This incision does not extend so high as the internal sphincter. This is done with the idea of lessening the power of the sphincter and thus diminishing the interference with the return circulation from this area.

After the operation is completed, the denuded surfaces are covered with iodoform gauze and a Lynch modification of Pennington's tube of small diameter is inserted and retained in place by adhesive strips across the buttocks. The bowels are confined three days by small doses of deodorized tincture of opium. At the end of two or three days the tube is withdrawn after irrigating the rectum through the tube and introducing three ounces of olive oil; or cascara or compound licorice powder is given to secure a soft movement. The denuded surfaces heal by granulation in from two to four weeks. The parts are irrigated daily and dressed with a 5 to 10 per cent. mixture of balsam of Peru in castor oil. There is little or no pain after the tube is removed and the patient need not remain in bed longer than three days.

Journal of Inebriety, Boston

Summer

126 The Psychologic Basis of Inebriety. T. A. Williams, Washington, D. C.
127 Prohibition in the South. H. O. Marcy, Boston.
128 Suicide and Alcohol. A. W. Hoisholdt, Stockton, Cal.
129 Congenital Morphinism. O. Jennings, Paris, France.
130 Laboratory Study of Inebriates. A. MacDonald, Washington, D. C.
131 Inebriety and Moral Degeneracy Cured by Trephining. H. L. Northrup, Philadelphia.
132 Four Hundred and Six Cases of Alcoholism. J. F. Hultgen, Chicago.

Military Surgeon, Washington, D. C.

August

133 Hygiene of a Soldier. F. M. Bruner, 7th Inf., N. G. Cal.
134 The first-Aid Corps of the American Red Cross as an Auxiliary to the Army. G. M. Blech, Chicago.
135 Surgical Operations Performed at the U. S. Naval Station, Tutuila, Samoa, Jan. 1 to Dec. 31, 1908. P. S. Rossiter, U. S. Navy.
136 System of Venereal Prophylaxis and its Results. E. O. J. Eytinge, U. S. Navy.
137 Report of Bombay Medical Congress. H. J. Nichols, U. S. Army.

Dominion Medical Journal, Toronto

August

138 Our Profession and the Laity in Preventive Medicine. H. J. Hamilton, Toronto.
139 *Advantages and Disadvantages of Pasteurized Milk. J. A. Amyot, Toronto.
140 Craniotomy versus Cesarean Section in Slightly Contracted Pelves. S. M. Hay, Toronto.
141 Hyperthyroidism—Diagnosis and Treatment. A. McKinnon, Guelph, Ont.
142 *Lupus (?) of the Nose. G. Boyd, Toronto.

139. **Pasteurized Milk.**—Amyot advocates the pasteurization of milk, because there is no positive chemical or physical evidence to show that this alters the milk. The taste is not changed; there is no odor acquired; there is no change in appearance; the cream line is not altered. Nor has anyone brought forward, he asserts, any real reliable evidence that the nutritive value of the milk is altered. The milk is thus rendered harmless so far as bacteria are concerned.

142. **Lupus (?) of the Nose.**—In the case reported by Boyd, there seemed to be no doubt about the original diagnosis, viz., syphilitic gumma. The character, appearance, situation and fairly rapid growth of the lesion with the external signs, apparently admitted of no doubt on this score. And the subsidence under specific treatment, although taking much longer than usual (4 months), seemed to support the diagnosis. But the recurrence later, the absence of the characteristic odor when bony necrosis is present, and the failure of specific medication, faithfully taken and often in heroic doses, scarcely to influence the symptoms, caused much doubt to arise as to its real nature. The first microscopic examination again was puzzling. There was nothing suggestive of either syphilis or tuberculosis in the sections examined. Later the nodular mammilated appearance of the infiltration, with distinct nodules on the turbinals, seemed to point to lupus as the probable cause.

Interstate Medical Journal, St. Louis

August

143 Hebosteotomy versus Cesarean Section, when the Latter is only Relatively Indicated in Cases of Narrow Pelvis. E. G. Zinke, Cincinnati.
144 Hopeful Outlook of the Tuberculosis Problem in the United States. A. S. Knopf, New York.

Bulletin Johns Hopkins Hospital, Baltimore

August

145 *Tuberculin [illegible] pensary Patients. L. Hamman, anc [illegible] re.
146 Work in th [illegible] r Tuberculosis of the Johns Hopkins [illegible] and S. Wolman, Baltimore.
147 Marmorek's Serum Treatment of Pulmonary Tuberculosis. S. Wolman, Baltimore.
148 *Employment of Patients with Arrested Tuberculosis. A. M. Forster, Towson, Md.

145. **Tuberculin Treatment Among Dispensary Patients.**—The total number of patients who received the tuberculin treatment is 112. But Hamman and Wolman report only those who were under treatment at least 90 days—a group of 71 cases. However, only 57 of the cases lend themselves to this classification, the remaining 14 being patients in whom the diagnosis of pulmonary tuberculosis can not be made with assurance, although they present very suggestive signs and symptoms. In these 14 probable cases the patients were treated in every way as if they were positively tuberculous, and they all improved as regards these symptoms, and in a fair number, the suggestive physical signs, too, vanished. The 57 cases comprise 13 incipients, 16 moderately advanced, 28 far advanced, of which 4 incipients, 6 moderately advanced, 25 far advanced, a total of 35, show tubercle bacilli in the sputum.

Of the 57 patients, 10 were apparently cured, in 16 the disease was arrested, 12 were improved, 18 were progressive, 1 died (a far-advanced case). Of the 18 progressive cases, 4 patients improved as regards symptoms, 10 were unchanged as regards symptoms, and only 4 were worse as regards symptoms (all 4 far-advanced cases). Of the 13 incipients, only 1 was progressive; of the 16 moderately advanced, 2 were progressive; of the 28 far advanced, 16 were progressive (1 died). The average gain in weight for the entire group is 6½ pounds. The maximum gain in weight is 41 pounds. Among those who lost weight are 3 apparently cured individuals. The average maximum dose of tuberculin per class, for the entire group was 0.005 gm. The early cases and those patients who do well take the largest dose. The largest dose administered was 1.0 gm. In the far-advanced and progressive cases, the patients reach the limit of tolerance early. That is, they soon attain a dose beyond which it is impossible to force them without unpleasant consequences. The duration of treatment is based rather on the progress of the case than on the condition at the beginning of treatment.

148. **Employment in Arrested Cases.**—Forster brings out the following points: Agriculture presents the best form of exercise for tuberculous patients from a therapeutic as well as an economic standpoint. The farm colony is not only the best possible means for the after-care of consumptives, but also, as it develops, will be the best agent for encouraging the much-wished-for movement toward the land. These colonies, if properly located and managed, can be made self-supporting. They present the only way for handling tuberculous families. They should be located in close conjunction with a sanatorium and a hospital for advanced cases, and should also be near large centers of population. No work should be undertaken without endeavoring to keep the entire program in sight. Forster does not claim that the farm colony will solve the tuberculosis problem, but that it is essential to have it in cooperation with all the other necessary forces.

Atlanta Journal-Record of Medicine

August

149 A Retrospect. J. H. McDuffie, Atlanta.
150 Glioma of the Retina. H. S. Persons, Montgomery, Ala.
151 Iritis. T. E. Mitchell, Columbus, Ga.
152 Extrauterine Pregnancy. H. S. Bruce, Opelika, Ala.
153 Pelvic Operations in the Female, *per Vaginam*. W. L. Cooke, Columbus, Ga.
154 Pathology—Human and Industrial. J. Burke, Manitowoc, Wis.
155 Modern Clinical Diagnosis. R. Lattimore, Savannah, Ga.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal

August 21

1 *Infection of Tuberculosis. C. T. Williams.
2 Congenital Malformations of Palate, Face, and Neck (concluded). A. Keith.
3 *Light, Pigmentation, and New Growth. W. Watkins-Pitchford.
4 Radium and Radiography in Skin Disease. L. Wickham.
5 Treatment of Nevus by Radium. H. L. Jones.
6 *Etiology and Treatment of Pruritus Ani. J. G. Tomkinson.
7 Cutaneous Actinomycosis. S. W. Allworthy.
8 Supposed Risks Attending *X*-Ray Treatment of Ringworm. R. H. Cooper.
9 Existence of an Idiosyncratic Susceptibility to Roentgen Rays. J. Hall-Edwards.
10 Practical Uses of Static Electricity. F. H. Humphris.
11 *X*-Rays in Gynecology. E. B. Hazleton.
12 Notification of Tuberculosis of the Lungs in Sheffield. H. Scurfield.
13 School Medical Inspection. E. Magennis.

1. **Infection of Tuberculosis.**—The various sources of infection in pulmonary tuberculosis and the extent to which they are elements in causation or spread of the disease are the topics discussed by Williams. Husband and wife infection, he says, is established beyond all doubt. Infection through the air passages by inhalation was, until recently, generally accepted as the common method of infection of human beings, but as to the precise material of infection authorities differed. He holds that though it is improbable that inhalation is the principal means of lung infection, there is every likelihood of some infection taking place through the upper air passages, and that the bacilli enter the lymphatics of the mouth and infect the lymph glands of this region and the tonsils, which are often the seat of tubercle. The frequent occurrence of strumous submaxillary and cervical glands may be due to this cause.

On the other hand, the possibility, and, indeed, probability, of the lungs and lymph system being infected through the intestines is proved without doubt. Infection through the skin and mucous membranes by wounds is not a common method of infection, but sundry cases are on record which prove its possibility and indicate the undoubted danger from that source. Hospital infection, or the infection of the resident staffs of hospitals from consumptive patients, he holds, occurs only with great rarity. However, there is something behind all these factors, in the individual strength of constitution, on which mainly depends the question of infection or non-infection. The healthy individual can defy the tubercle bacillus, the same person depressed by want, impure air, or recovering from acute disease cannot, and falls a victim to the attack. But under improved conditions his constitution may rally, and after a long struggle overcome and expel the invader. Finally, all infection from consumptive patients can be avoided if the well-recognized precautionary measures are adopted and carried out thoroughly.

3. **Light Pigmentation.**—Watkins-Pitchford contends that the external pigmentation of animals is, primarily, but one of several agencies serving to protect the enclosed tissues from excess of illumination; that the pigmentation of certain internal tissues assists in controlling and directing the multiplication of those cells which habitually undergo fission, and that the "intention" of the particular color selected for the blood of the higher vertebrates is similar to that with which we make use of ruby glass in the window of a photographic darkroom. The production of pigment in response to increase of illumination is a vital and not a physical process, and is probably an inherent reaction to provide against some consequences dangerous to the organism. The cells of the body possess peculiarities which Watkins-Pitchford calls psychic. They possess the "instinct" for orderly multiplication and behave "instinctively" as their ancestors behaved. The direction of multiplication of epithelial cells was originally and for many ages dictated by the presence of pigments. The author's main proposition is that cancer is the result of the loss by the cell of its "instinct" for orderliness in multiplication, and that this "psychosis" of the cell is usually consequent on undue stimulation. The liability of an organ or region to be affected by cancer is in proportion to its liability to irradiation. Organs and regions (such as the superficial portion of the parotid and the dorsum of the trunk) which have been, in past ages, continuously liable to irradiation have acquired a partial immunity to cancer. This partial immunity is usually signalized by "latent malignancy" and chronicity of the process. Those organs which are best protected from ir-

radiation are the least liable to cancer; those which were formerly well protected and are now exposed are the most liable. The cell's environment usually requires very prolonged illumination from natural sources before the stability of its "instinct" is threatened. Cancer may be prevented by efficient protection of the body from light. Natural protections, such as hair on the face, should be encouraged. The clothing should be absolutely light-proof. The ventral surface of the thorax and abdomen should be specially protected. The tobacco pipe should be discarded at 35.

6. **Pruritus Ani.**—The local drug applications which in Tomkinson's hands appear to have been the most useful are tar and lead lotion and mercurial ointments, while of the physical agents the high-frequency current has proved of conspicuous benefit.

Lancet, London

August 21

14 Bacteriology and Pathologic Anatomy of Leprosy. J. M. H. MacLeod.
15 Malformations of the Heart (concluded). A. Keith.
16 *Early Signs of Rheumatism of the Heart. A. M. Gossage.
17 *Tumor of the Large Intestine Simulating Disease of Uterus or Uterine Appendages. V. Bonney.
18 Henoch's Purpura Associated with Angioneurotic Edema. A. Don.
19 Antityphoid Vaccination with Attenuated Live Cultures. A. Castellani.
20 Fibrolysin in Cases of Fibrous Contraction. R. H. Strong.
21 *Unusual Type of Stomatitis in an Infant. A. H. Brehaut.
22 Suppression of Urine Simulating Calculus Anuria. P. King.
23 *Appendicitis Presenting Somewhat Unusual Features. D. Ligat.
24 Transient Ataxia Following Diphtheria. H. O. Butler.
25 Pulmonary Edema. C. E. Denning.

16. **Rheumatism of Heart.**—Gossage believes that the main factor in the production of mitral incompetence early in rheumatism is a loss of tone in the mitral sphincter. The pathologic reason for such loss of tone is the development, especially near the mitral ring and near the root of the aorta, of inflammatory nodules. In such nodules toxins would be elaborated (whether formic acid or others) and the lymph of the part would contain these toxins. Hence, the muscle fibers of the mitral sphincter would be bathed in toxins, the special action of which is to diminish tonicity, while the rest of the cardiac muscle would be much less severely poisoned since the toxins must be absorbed into the general circulation in order to reach any fibers that are not in close proximity to the nodules. Thus in any rheumatic myocarditis an early loss of tone in the sphincter of the mitral valve would be expected with the development of a regurgitant murmur. Nodules tend also to form near the root of the aorta; but the aorta has no sphincter and so no change is produced during an attack of rheumatic fever. There is also heard at the apex a murmur diastolic in time, soft and blowing in character, only temporary, which seems to have nothing to do with the development of a genuine stenosis of the valve. Death in a first attack of rheumatism is very uncommon, apart from hyperpyrexia, but a fresh attack may fatally affect the heart that is already damaged by valvular disease or pericardial adhesions, or the muscle of which has previously been injured by poisoning or inflammation. The lesions of rheumatic myocarditis are in themselves insufficient to lead to a fatal issue, and the main factor in the production of a fatal cardiac failure seems to be the action of the toxin on the muscle cells.

Affections of the myocardium in rheumatism may be divided into the inflammatory and the toxic. Inflammatory lesions cause a loss of tone in the muscle which surrounds the mitral valve, allowing of mitral regurgitation. Thus an apical systolic murmur is the sign of rheumatic myocarditis, and is, indeed, the only sign of inflammation of the heart apart from pericarditis. In the majority of cases the presence of such a systolic *bruit* is diagnostic of myocarditis, but in a small minority a regurgitant murmur may result from general dilatation without any inflammation. Poisoning of the heart muscle in rheumatism causes a general dilatation of the heart and sometimes a mitral diastolic murmur. Dilatation may or may not be associated with inflammation of the myocardium, but the diastolic murmur may be taken to imply an absence of myocarditis at the time it is heard. So far as the immediate welfare of the patient is concerned, the toxic action of rheumatism is more important than the inflammatory, since it is to the consequent failure of tonicity and contractility that death during an attack is due. Myocarditis is probably always associated with endocarditis, so that there is danger of permanent damage to a valve and the inflammation in the muscle itself may lead to such local damage that tone is never regained, leaving a permanent widening of the orifice. It is probable that the muscle may sometimes completely recover both from the poisoning and the inflammation, but in other cases the muscles never again become healthy.

17. **Tumor of Large Intestine Simulating Disease of Uterus.**—The cases reported by Bonney are the following: (1) Inflammatory tumor of cecum simulating a uterine myoma; (2) carcinoma of the transverse colon with a secondary growth in the sigmoid simulating a malignant ovarian tumor; (3) carcinoma of the sigmoid colon simulating an ovarian dermoid cyst; (4) carcinoma of the sigmoid simulating disease of the right uterine appendage; (5) carcinoma of the sigmoid with secondary growth in the anterior rectal wall simulating a malignant ovarian tumor.

21. **Unusual Case of Stomatitis.**—Brehaut's case presented every evidence of a threatening gangrenous stomatitis undergoing spontaneous cure. The particularly interesting features in the case are the following: Patient, male, was 4 months old. Primary dentition had not as yet set in; there was no history of any acute infectious disease or of mercurialism; the surroundings were not such as to call for censure. The case occurred on a farm, and there was no history of illness among the cattle. The child was bottle-fed and had no evidence of rickets or scurvy; he was anemic, but well-grown and sturdy. The acute onset and the great local reaction showed the infection, whatever its nature, to have been local and not constitutional in origin. The left cheek was very swollen and the skin was shiny; the swelling was not localized. The cheek was very hard and tense; no pitting could be obtained. It was extremely tender, and a slight touch produced a shriek. The inside of the cheek was dusky, and about half way back, on a level with the alveolar border of the lower jaw, there was a small patch of about the size of a No. 4 shot, dusky gray in color, which had the appearance of threatening gangrene. The glands in the neck on that side were enlarged and tender; any lateral movement of the head produced pain. The skin of the neck was edematous, as was also that of the scalp, especially over the occipital region. The temperature was 104.6 F. and the pulse was uncountable (probably 160). Under expectant treatment recovery ensued.

23. **Appendicitis.**—A man, aged 40, manifested symptoms diagnostic of a first attack of appendicitis. The appendix was removed. It was about 3½ inches in length, and ran vertically upward on the outer aspect of the ascending colon. It was straight. Its distal third was gangrenous. Pouting from the antimesenteric border of the gangrenous portion was an enterolith of oval shape and of the size of a bean, quite hard, and giving a metallic ring when allowed to fall on the plate. The mesoappendix was also gangrenous and its vessels were thrombosed. About a teaspoonful of offensive chocolate-colored pus escaped. There were no limiting adhesions. The appendix and its mesentery were removed and the cavity drained. The pulse and temperature did not fall after operation. There was no general peritonitis, the abdomen remaining flat and soft, and the bowels acting well to calomel on the third day. The appendix region drained well. The patient had no nausea nor did he vomit. The jaundice became more intense for the four days following operation, but was decidedly less during the next two days. The tongue remained dry and furred. There was some tenderness over the hepatic area. There were no rigors, but the patient was frequently drenched in sweat, the temperature then falling for a short time to 96 F. and the pulse remaining between 120 and 125. On the fifth day after operation the pulse was 135 and the temperature 103. The patient died on the following day, six days after operation, and the tenth day of the attack. Ligat thinks there can be little doubt that death was due to infective pylephlebitis.

Clinical Journal, London

August 11

26 Asthma. S. West.
27 Dysmenorrhea. T. G. Stevens.
28 Diseases of the Thyroid Gland. R. F. Fox.

August 18

29 Some Elements of the Theory of Immunity. E. von Ofenheim.
30 Abscess of the Liver. A. Don.
31 *Gastric Dilatation Associated with Extreme Cyanosis. G. Templeton.

31. **Gastric Dilatation with Extreme Cyanosis.**—A woman, aged 28, of a robust constitution, three weeks previous to this illness, had lost a near relative to whom she was much devoted and whom she had nursed through an illness of several months' duration. She always enjoyed her food, had only occasionally slight indigestion, and at intervals took a mild aperient. Two days before the onset of the attack she had performed a tedious railway journey, and partook of luncheon on the train, which she did not perfectly relish. The following day she was listless and disinclined to eat or to go out. She had some general abdominal discomfort but no sickness. A few days afterward her appearance was observed to change suddenly. Her naturally fresh complexion changed to a dusky blue, the lips became prune-juice colored, and the extremities cold. Consciousness was retained perfectly and there was no rigidity or twitching. She complained of sharp abdominal pain in the region of the umbilicus, and vomited material which was said to contain nothing suggestive of blood. The cyanosis increased till the face was almost black, the lids became so puffy that her eyes were obscured, the lips were turgid, and the nose assumed a flat, negro-like appearance, but as time progressed she complained of severe pain across the upper part of the abdomen. A tympanic note could be elicited over the area of distention; the liver dulness was reduced to two inches below the right nipple from this point. Tympanitis extended to a line two inches below the umbilicus. There was no stomach splash and flank dulness could not be detected. There was rigidity and some tenderness in the upper part of the abdomen: the pulse rate was steadily increasing with a temperature of 97.8 F. The abdomen was opened by a median epigastric incision, which bled profusely, and the tense anterior wall of the stomach presented. Coursing over its surface numerous engorged vessels were observed. Gas and free fluid were entirely absent from the peritoneal sac, and after withdrawing the stomach and systematically examining it from the fundus to pylorus, *no solution of continuity* could be detected, nor was any localized thickening encountered suggestive of ulceration. The duodenum was next investigated, with the same result—no perforation or ulcer. The stomach was not opened, but while outside the body the extreme congestion of its walls became considerably less, and the muscular tissue in virtue of the oxygenation of the blood and the alteration in tension, appeared to improve in tone, and the stomach became rapidly reduced in size and could without difficulty be returned within the abdomen. The wound was completely closed in layers. The patient had by this time lost much of her cyanosis and the pulse had fallen to 80 a minute. Examination of stomach by percussion at the end of a week demonstrated its return to normal dimensions. The bowels moved naturally the day following operation and no melena was detected. The patient has remained in good health since—two and one-half years.

Journal of Tropical Medicine and Hygiene, London

August 2

32 Blackwater Fever. A. W. May.
33 Chylous Ascites. K. S. Wise.

Glasgow Medical Journal

August

34 Presentation of a Memorial of Lord Lister at the Opening of the New Glasgow Royal Infirmary. R. J. Godlee.
35 The Schools for the Deaf and Dumb. J. K. Love.
36 Extrinsic and Intrinsic Conditions Affecting School Children; Study of Some Schools and School Children in Glasgow. D. McKail.

Quarterly Journal of Medicine, London

July

37 *Syncopal Attacks, Associated with Prolonged Arrest of the Whole Heart. E. E. Laslett.
38 Irregular Action of the Heart in Mitral Stenosis: Inception of Ventricular Rhythm, etc. T. Lewis.
39 *Pathology of Paroxysmal Hemoglobinuria. C. H. K. MacAlister.
40 The Frequent Failure of the Urine to Decompose in Cases of Pulmonary Tuberculosis. W. H. White and H. I. Janmahomed.
41 Peripheral Birth Palsy. E. F. Trevelyan.
42 *Effects of Certain Drugs in Diabetes Mellitus. A. J. Hall.
43 Study of Congenital Family Cholemia. R. Hutchinson and P. N. Panton.
44 Excretion in Urine of Sugars Other than Glucose. A. E. Garrod.

37. **Syncopal Attacks.**—The patient in Laslett's case was a bright, intelligent woman, somewhat anemic. She suffered from breathlessness on exertion, but otherwise was able to go about her ordinary household duties, except when the fainting attacks were very frequent and severe. There was a systolic murmur at the apex and pulmonary area, probably hemic in nature, but there was no enlargement of the heart. The other systems presented nothing abnormal. At the time when the syncopal attacks were occurring, the pulse was slow and irregular, the rate often sinking to from 32 to 40 a minute. This infrequency was largely due to the presence of long intermissions, which varied in length from two to five seconds, as a rule, but the intermediate beats were also slow, a common frequency being 60 a minute. A tracing of the jugular pulse taken simultaneously with the radial pulse showed that the auricles as well as the ventricles participated in the stop, and that the intermissions were due to an arrest of the whole heart, not a heart block. Laslett repeatedly listened to the heart when the pulse was irregular, and was never able to hear any sounds during the intermissions. The fainting attacks occurred only when the pulse was irregular, and so far as his observations go only when the heart ceased to beat for three seconds or more.

With regard to the condition of the pulse and the frequency of the faintings, there appeared to be a cycle of events of rather variable duration. Speaking generally, the pulse remained regular (rate about 70 a minute) for the most part for a period of three or four weeks, and then intermissions began to appear which at first were of short duration and comparatively infrequent. Frequency and duration of the stops gradually increased to a maximum, at which times intermissions of four and five seconds were frequent. After two or three days there was a gradual diminution in the severity of the condition until the pulse became normal again. The period of irregularity was usually about a week. There were, however, considerable variations in the duration of both irregular and regular periods, and the latter was, moreover, often broken by short periods of slighter irregularity. Apart from these temporary disturbances of the cycle, the waxing and waning of the condition was very characteristic. The frequency of the syncopal attacks varied absolutely with the frequency and length of the intermissions.

39. **Paroxysmal Hemoglobinuria.**—MacAlister concludes that paroxysmal hemoglobinuria is the result of intravascular hemolysis. This intravascular hemolysis occurs when the blood serum becomes autolytic. There is in the blood serum a potential toxin, composed of cytase and amboceptor, which becomes active under certain conditions. The most prominent of these conditions is the application of external cold. In experiments *in vitro* it appears that direct application of cold will activate the serum. *In vivo* it is most probable that the application of cold sends impulses to the vessels by the vasomotor arc—that the hemolytic reflex travels by the same path as the vasomotor reflex. Variations in the severity of the paroxysm may depend on variation in the excitability of the nerve centers. When these are unusually excitable, a paroxysm is more readily produced than when they are quiescent. This, perhaps, accounts for the fact that while the initial paroxysms in such patients are due to a very severe chilling, the subsequent paroxysms start from a much more trivial cause.

Paroxysmal hemoglobinuria and Raynaud's disease are closely related and the boundary line between the two conditions is indefinable. The vasomotor disturbances characteristic of the latter disease are frequent in paroxysmal hemoglobinuria, and 6 per cent. of patients who suffer from Raynaud's disease pass hemoglobin in the urine. A paroxysm is attended with great degeneration and destruction of the red corpuscles. The number of leucocytes is not greatly altered, but they participate actively in the process of hemolysis. After a paroxysm, the reconstitution of the blood is very rapid, and this, coupled with other observations which need not here be recapitulated, suggests that the products of cell destruction are largely retained to form the raw material for a new generation of erythrocytes. The ultimate source of the hemolysin is not known. There are no gross organic changes in the abdominal viscera. The liver is enlarged during a paroxysm. The spleen also, possibly from an accumulation of waste products, becomes bigger. There is possibly passive hyperemia of the kidneys, but no inflammatory change. There is no evidence, histologic or experimental, to support the view that a secretion is poured out by the endothelial cells, in response to secreto-motor stimuli.

42. **Effect of Certain Drugs in Diabetes Mellitus.**—The primary object of Hall's clinical observations was to ascertain the effects of opium, or its alkaloid codein, on various symptoms in diabetes mellitus; in what respect, if any, the crude drug differed from the alkaloid in action; and whether such effects varied with the dose given. For this purpose a series of nine cases of ordinary diabetes were placed, so far as possible, under similar conditions. Codein was given in seven cases, always in the form of a pill. As a rule, the initial dose was ¼ grain, thrice daily, which was gradually increased, at varying intervals, by ¼ grain to the dose, or by larger amounts, until as much as twelve grains was being taken daily. On the whole, the definite results obtained in these cases are disappointing. Possibly the doses given were altogether too small. This does not seem an adequate explanation, however, as in more than one case the results have appeared to become less favorable with increased doses. On the other hand, in a certain small number of cases the effects of gradually increased doses have been favorable even over several weeks. It may be said that inasmuch as codein will quickly lose its first sedative effect, it can only be of value for a short period.

Opium, either in the form of pilula opii or of pilula saponis comp., was given in six cases. In three of these it was tried before any other drug, while in three other cases it was given to patients who had previously taken codein, in order that the effects of the two alkaloids might be compared in the same individuals. The initial dose given varied from 1/5 to 1 grain, thrice daily, and was usually increased gradually, in one case up to 12 grains daily. In spite of the fact that one of the patients became worse and died while under treatment by opium, the general results obtained with it were, on the whole, rather more uniformly successful than those obtained with codein. In three cases codein had previously been tried, and comparing the results one sees that opium began to act effectively when codein in increasing doses had ceased to do so.

Annales de l'Institut Pasteur, Paris

July 25, XXIII, No. 7, pp. 513-583

45 Transmission of Leprosy. E. Marchoux and G. Bourret.
46 *Similar Action of Potassium Iodid and Tuberculin.* F. Sorel.
47 Chemical Composition of Bacterial Bodies and their Production on a Large Scale. (Production en grand des corps bactériens et leur composition chimique.) M. Nicolle and E. Alilaire.
48 Modifications in Leucocytes in Acquired Immunity. (Modifications des globules blancs dans l'immunité acquise.) A. T. Salimbeni.
49 Pathologic Anatomy of Inherited Syphilis of the Pancreas and Parotid Gland. G. Faroy.
50 Reduction in Excitability of Nerves in Animals Treated with Alien Serum. (Diminution de l'excitabilité des nerfs chez les animaux préparés avec le sérum d'une espèce étrangère.) Yamanouchi.

Archives des Maladies du Cœur, etc., Paris

July, II, No. 7, pp. 385-448

51 Laboratory Methods in Diagnosis of Mitral Insufficiency. Cardioesophageal Pulsation. C. Lian.
52 Case of Congenital Cyanosis. L. Babonneix and G. Paisseau.

Archives de Médecine des Enfants, Paris

August, XII, No. 8, pp. 561-640

53 *The Blood in Infectious Diseases in Children. (Examen du sang de l'enfant dans les maladies infectieuses.) M. and W. de Biehler.
54 *Differential Blood Count in Eruptive Diseases. (Diagnostic hématologique des fièvres éruptives et des érythèmes qui [illegible] M. Pater.
55 * Septicemia in Infants. (Septicémie bacille paratyphique chez le nourrisson.) H. Triboulet and others.

53. **Blood Formula in Infectious Diseases.**—De Biehler examined the blood of 55 children with various infectious diseases including 17 with measles, 6 with smallpox, 11 with diphtheria and 21 with scarlet fever. The findings were about the same in all, he reports. The specific gravity of the blood directly paralleled the fever. The state of the blood beforehand determined the number of red corpuscles and the proportion of hemoglobin, but the number of leucocytes increased when some complication was impending or established. Merely a slight increase indicates a mild case without secondary infection.

54. **Differentiation of Eruptive Fevers by Blood Count.**—Pater compares the findings in 10 cases of scarlet fever with those in 7 of typhoid, pneumonia, gonorrhea or gastroenteritis, his conclusions being that a typical polynucleosis accompanies the onset of the eruption in scarlet fever. It is pronounced and remains high during the first two or three days of the eruption, even in very young children. The number of mononuclears declines, especially the proportion of lymphocytes. The eosinophiles fluctuate, but are generally increased, especially by the end of a few days of the disease. Scarlatiniform erythemas are distinguished from true scarlet fever by the leucocyte formula. It is nearly or quite normal, but the mononucleosis is pronounced. Measles and rubeola have no distinctive blood picture in comparison with erythems liable to simulate them, but they can be readily distinguished from scarlet fever by the pronounced polynucleosis of the latter.

55. **Typhoid and Paratyphoid Septicemia in Infants.**—If there is intestinal localization of the typhoid or paratyphoid in infants it takes the form of enteritis limited to the small intestine. The infection may also induce a meningoencephalitis or bronchopneumonia. Triboulet reports a case of typhoid and another of paratyphoid in infants six and nineteen months old, and cites several from the literature. The mother of the first child had typhoid while she was still nursing it. In the paratyphoid case, diarrhea and cough with fever and fatal bronchopneumonia formed the clinical picture.

Lyon Chirurgical, Lyons

August, II, No. 3, pp. 261-404

56 Intraparietal Inguinal Hernia in Women. (La hernie inguino-interstitielle chez la femme.) L. Berard and J. Stefani.
57 *Practical Treatment of Fractures of the Forearm. (Les mouvements de pronation et de supination dans les fractures de l'avant-bras.) J. Bosquette.
58 *Orbital Puncture. (La ponction des espaces sous-arachnoidiens cérébraux par la fente sphénoidale.) L. Bériel.

57. **Practical Treatment of Fractures of the Forearm.**—Bosquette gives twenty-four illustrations of the different kinds of fracture that may be observed and urges the necessity for always bearing in mind the preservation of movements of pronation and supination in treatment. Immobilization is not necessary for fracture of the head of the radius, but extension and supination are required for fracture of the shaft of the ulna or of the olecranon. The forearm should be flexed on the arm and forced supination applied for fractures of the shaft of both bones or of the radius alone at any point. Fracture of the coronoid process requires forced flexion and supination. If there is concomitant fracture of the head of the radius, the indications are met by immobilization in flexion, permitting pronation and supination. In case of fracture of the lower end of the radius, forced pronation should be applied after reduction.

58. **Orbital Puncture.**—Bériel here gives an illustrated description of the technic for this wee sister of lumbar puncture. He has worked it out on the cadaver and has applied it in four clinical cases, and recommends it as a rational and interesting method of obtaining access to the subarachnoid space in the brain. Combined with lumbar puncture, it enables the entire mass of the cerebrospinal fluid to be medicated or substituted, and allows withdrawal of cerebrospinal fluid by lumbar puncture without danger of abrupt fluctuations in the pressure on the brain. As the procedure is dangerous, the original article should be consulted for the technic which it is impossible to give in an abstract. Bériel insists that the technic is comparatively simple after it has been learned on the cadaver.

Lyon Médical, Lyons

August 1, XLI, No. 31, pp. 177-224

59 *Chief Modes of Propagation of Epidemic Diseases. E. Grandclément.
60 *Etiology and Prophylaxis of Typhoid Fever in Regiments. H. Rondet.

August 8, No. 32, pp. 225-264

61 Case of Staphylococcus Meningitis in Scarlatina. F. Weill.

59-60. Prophylaxis of Infectious Diseases.—All those recovering from a contagious disease and those who have tended the patients may harbor the germs for weeks and months, and such persons should be especially careful in regard to cleanliness. They should wash their hands frequently so that any possible contamination from excreta may be avoided. Rondet even asserts that frequent washing of the hands of nurses and cooks is the only certain means of preventing contagion. He emphasizes the fact that epidemics are not spread by the severe cases, which are always supervised and isolated, but by the walking cases and bacilli-carriers, and these nullify the effect of the final official disinfection of the dwelling. Effectual prophylaxis of typhoid fever among troops requires that every man should wash his hands after defecation or urination, especially the men employed about the food. Each man should have his individual towel, and to have the method truly effectual, he says, a corporal should be detailed to supervise this cleansing of the hands. After convalescence from typhoid fever the men should not be allowed to work in the preparation or serving of food.

Presse Médicale, Paris

August 7, XVII, No. 63, pp. 561-568

62 Antibodies in Hydatid Cysts. (Etude sur les anticorps hydatiques.) Hector y Rossello.
63 Internal Transmigration of the Fecundated Ovum. E. Schwartz and Boyer.

August 11, No. 64, pp. 569-576

64 *The General Practitioner's Examination of Intestine Functioning. (L' A B C de l'examen fonctionnel de l'intestin.) R. S. Kolbé.
65 *Treatment of Exstrophy of the Bladder. (Cure chirurgicale de l'exstrophie de la vessie.) R. Proust.

64. Practical Examination of Intestinal Functioning.—Kolbé declares that the general practitioner should be able to determine the functional capacity of the bowels, and urges a rational test diet with analysis of the stools and practical application of the information derived from the findings, for regulating the diet and treating bowel disturbances. He advises the Schmidt and Strasburger technic as simple, rapid and requiring no paraphernalia. In his experience the patients soon became interested and collaborated with enthusiasm when they recognized the practical importance of the test. The macroscopic findings are sufficient, no chemical or microscopic examination being required. [The Schmidt test diet was described in The Journal, July 11, 1908, page 175.] Coprology has demonstrated that the so-called nervous diarrheas are in reality more or less masked catarrhal conditions, requiring astringents, preferably an astringent diet, rather than drugs. Catarrhal conditions require gruels and milk, while excessive fermentation indicates suppression of starch, but in every case the articles of food which the individual finds difficult to digest, as determined by the tests, should be substituted by others which he is able to take care of. In the sluggishness following a secretory disturbance, ingestion of some substance which is passed along without putrefying or being digested may prove useful. Agar-agar is used for this purpose in China and Japan as a cure for constipation. These simple means of obtaining an oversight of intestinal functioning do not take more than ten minutes, and they open the doors for rational and efficient treatment, dietetic and drug.

65. Treatment of Exstrophy of the Bladder.—Proust does not contribute anything new, but gives nine instructive illustrations of several technics for this purpose, comparing the facility of the various operations and the outcome. He is inclined to regard Buchanan's technic as the safest and simplest, while it promises the best results.

Revue de Médecine, Paris

August, XXIX, No. 8, pp. 593-672

66 The Bronchial Lesions of the Tuberculous Lung. P. Halbron.
67 *Contraction and Dilatation of Iris Synchronous with Pulse or Respiration. (Hippus circulatoire.) M. Roch. Id. (Coexistence de l'hippus respiratoire et du pouls dit paradoxal.) M. Roch and L. Campiche.
68 The Geographical Distribution of Diabetes. (Fréquence du diabète sucré dans differentes localités du globe et son augmentation.) R. Lépine.
69 The Parathyroids. L. Cotoni.

67. "Circulatory" and "Respiratory" Hippus.—Roch found in 50 persons examined that the fluctuations in the blood pressure were reflected in the pupil, a high pressure being accompanied with myosis and a low pressure with mydriasis. The iris may also contract and dilate with the respiration. In a recent case, signs of aortic insufficiency were accompanied by this circulatory hippus.

Semaine Médicale, Paris

August 11, XXIX, No. 32, pp. 373-384

70 The New Sanitary Regulations for the Army in the Field. (Le nouveau règlement du service de santé en campagne de l'armée française.) F. Moty.

August 18, No. 33, pp. 385-396

71 *Is there Danger in Exploratory, Disinfecting or Palliative Interventions in Uterine Cancer? R. de Bovis.
72 *Quantitative Renal Impermeability. V. Courtellemont.

71. Is There Peril in Exploratory, Disinfecting and Palliative Interventions on Uterine Cancer?—De Bovis refers in particular to the experience of Zacharias (mentioned in The Journal, July 24, 1909, page 332), who had seven fatalities follow palliative scraping of inoperable uterine carcinomas. He warns against preliminary curetting of cancer before removal as liable to open a passage into the blood for virulent germs in the cancer, but admits that it is necessary to discriminate between cancer of the cervix and of the fundus in this respect, the former being the more dangerous. He sifts the literature on the subject and his own experience, his conclusions being that the wise course is to steer between the two extremes, not curetting or disinfecting enough to perforate the cancer or to impose on the patient two serious operations, but sufficient to prepare the cancer better for removal. The technic followed by von Franqué seems to be admirable; after antiseptic douches or tamponing, with alcohol and iodin, he curettes slightly the evening before the operation or directly before it. This preliminary treatment may be continued a little longer in the dubious cases, supplemented by cauterization; Lomer, Mond and Rösling have even reported cases in which cauterization caused the subsidence of infiltration which proved to be merely inflammatory and not malignant, so that the cancer, deemed inoperable before, was then readily removed. Intrauterine curetting is contraindicated by a pronounced and persisting febrile condition, extreme friability of the uterine tissue, pyosalpinx, or great debility, even a palliative operation being unwise in these cases unless to avert danger of hemorrhage. In Zacharias' cases, rupture of a pyosalpinx was responsible for the fatality in one and peritonitis from perforation of the cancer in another.

72. Importance of Quantitative Renal Impermeability.—Courtellement discusses the condition in which the kidneys are unable to eliminate above a certain proportion of the amount of fluid ingested; all over this amount is retained, inducing oppression and dyspnea. This quantitative retention is generally associated with the qualitative variety, but it is the former that determines the prognosis. The patient should be tested by allowing increasing amounts of fluids to determine the tolerance, comparing the amount ingested with the output and the development of dyspnea with a certain amount of retention. As a rule, it is wise for the patient not to ingest more than 100 or 300 gm. of fluids in drinks, soups, etc., in excess of what he eliminates in the form of urine. This principle should be applied when there is merely oppression or dyspnea, not waiting for the development of anasarca or ascites. He has found it necessary to reduce the total amount of fluids ingested to 800 or even to 700 gm. in certain cases, and would not hesitate to go even lower at need. After the storm is past he permits more fluids, but usually finds that trouble may be anticipated when the excess of intake over the output in urine reaches 400 or 500 gm. This restriction of fluids he always accompanies by restriction of salt, although generally permitting meats. No egg white is allowed. The patient is ordered to stay in bed in the acute phases with relative repose during the intervals of calm, and, if necessary, purging and local or general venesection. Reduction of the amount of fluid ingested is the main thing, however, and frequently proves alone all that is necessary. According to the classic conception of uremia—qualitative renal impermeability—the patient is urged to drink freely to aid in elimination of toxins, regardless of the increasing dyspnea as the amount of urine grows less in proportion to the fluids ingested. With the conception of quantitative impermeability, on the other hand, the treatment should be just the reverse, as otherwise the patients are liable to succumb in pronounced uremia or from heart complications.

Archiv für klinische Chirurgie, Berlin

XC, No. 1, pp. 1-261. Last indexed Sept. 4, p. 822

73 *Surgical Treatment of Non-malignant Stomach Lesions and [illegible] irurgische Behandlung gutartiger [illegible] ondere des Magengeschwürs und [illegible] bes. Berücksichtigung der Spät- [illegible]
74 [illegible] Rupture of the Liver and Later Expulsion of Sequester of Liver Tissue. (Subcutane Leberrupter mit späterer Ausstossung grösserer Lebersequester und deren Behandlung.) P. Biernath.
75 *Suction Apparatus as Aid in Surgery. (Verwendung der Ansaugung in der operativen Chirurgie.) F. Krause.
76 *Intravenous Adrenalin-Saline Infusion in Peritonitis. H. Heineke.
77 Fulguration and Radium Emanations in Cancer. (Gebrauch der Fulguration und der Kreuznacher Radiolpräparate bei der Behandlung der Krebse.) V. Czerny.
78 Partial Necrosis of Colon after Resection of the Stomach. C. Goebel.
79 Treatment of Surgical Lesions in Asia. (Behandlung chirurgischer Krankheiten in [illegible]
80 *Belt Constriction for Exartic [illegible] (Ueber die Exarticulatio [illegible] nach [illegible]
81 Pathog [illegible]
82 Immuni [illegible] munisirende Wirkung [illegible]
83 Callus [illegible] ulating Fracture. (Ein [illegible] n Condylus internus [illegible] Preiser.

73. Surgical Treatment of Non-Malignant Gastric Disease.—Busch reviews the ultimate outcome in 124 cases of benign stomach affections in which Körte has operated since 1900. The intervention was on account of gastric ulcer and its consequences in 87; duodenal ulcer in 7; stenosis of the pylorus from ptosis or other causes in 16, and from adhesions left by pericholecystitis in 7; caustic injury in 5, and acute dilatation of the stomach in 2. The age of the patients ranged from 14 to 68. The general conclusions are: (1) Nervous stomach affections should never be operated on except that an exploratory laparotomy may be necessary to exclude positively the presence of an ulcer; (2) stenosis from an ulcer and ulcers persisting in spite of systematic and prolonged internal measures indicate preferably *retrocolic poster*[illegible] with a circular suture in two tiers, as [illegible] esults. If the stomach is extremely flabby and stretched an entero-anastomosis according to Braun's technic may be required as a prophylactic measure. Especially with open ulcer, after-treatment with means to reduce acidity is particularly necessary, possibly accompanied with lavage, and always careful selection of the articles of diet. Resection should be considered when there is the least suspicion of the malignant nature of the tumor, also for severe callous tumors, especially if they intrude on neighboring organs (liver, pancreas). The resection should always be circular, according to Riedel's technic. The conditions in individual cases must decide whether the more radical but more serious resection technic should be preferred to gastroenterostomy.

75. Suction Apparatus as Aid in Operating on Brain Tumors.—Krause has had unusual experience in the removal of brain tumors and has always felt the lack of some means of getting hold of the tumor to draw it out *without the need of prying* it up from behind. He has recently been using a suction apparatus for the purpose and has found it effective. He used at first something like a Bier cupping glass, with rubber bulb, but has since perfected the technic by connecting the glass cup with the hydrant to form an air pump worked by the vacuum from the running water. Eight large illustrations show the application of the suction apparatus and the advantages from its use. A soft friable tumor in the depths is revealed by the turning back of the bone flap, and the rounded edges of the long narrow glass cup are placed on the most accessible part of the tumor and suction applied. At once the tumor is sucked up into the cup and is held rigidly by the negative pressure, so that the tumor and glass form a solid whole which can be moved and manipulated as a single object, without the necessity for lifting the tumor from behind. When the tumor has been drawn out, its base can be severed like a pedicle. The brain is pushed back with small wads of cotton so that all danger of injury from instruments is avoided. He uses glass cylinders for the cups, from 10 to 55 mm. in diameter, the outer end tapering abruptly to a point, bent downward, and connected by a boiled rubber tube, about half a yard long, with another tube five or six yards long which runs along the floor to the hydrant. His illustrations show the apparatus as used for tumors in the frontal and cerebellar region. In order to keep control of the suction, there is a small round hole in the side of the cylinder, just where the index finger would naturally be applied in holding the cup; by raising the finger air streams in and suction stops at once. One illustration shows a tumor behind the cerebellum, an *Acusticustumor*, which he drew out with a small suction cylinder until the tumor was nearly as long and narrow as the cylinder. He was able to draw out and enucleate by this means a tumor in the hypophysis which was nearly as large as an egg, and to which he gained access through the forehead. He doubts if a tumor of this size could be removed through the small hole at the base of the sella turcica according to Schloffer's technic. He turned back a flap reaching from the longitudinal sinus to the middle of the temporal muscle, exposing to view the entire anterior cranial fossa and part of both temporal lobes and of the frontal lobe on the other side. *The patient recovered from the operation and* the acromegaly is subsiding, while the diabetes mellitus vanished almost at once. In conclusion, he suggests that the suction apparatus may possibly prove useful in surgery of the lungs and for removal of intrathoracal tumors, retrosternal struma, and also in the small pelvis. The suction cup allows as firm hold of the growth to be removed as the corkscrew which aids so materially in the removal of uterine myomas.

76. Intravenous Adrenalin-Saline Infusion in Peritonitis.—Heineke reports extensive experimental and clinical research, which demonstrates, he thinks, that the main effect of the infusion is due to the salt solution, and that this is more prominent in the cases in which the patient has just lost large amounts of fluid. The effect of the adrenalin is so transient that it can be of little use in peritonitis; its chief field is in collapse, transient in its nature, as in general anesthesia and spinal anesthesia; in shock after severe operations and injuries; in hemorrhage; and possibly also in intoxications and in threatening conditions during infectious diseases.

80. Exarticulation of Hip with Half of Pelvis.—Pagenstecher states that only 7 of the 24 patients on record requiring interileoabdominal exarticulation survived more than a short time after this severe and dangerous operation. Now, however, the application of the Momburg belt constriction has lessened the danger of hemorrhage, and he reports a case in which this technic permitted the operation to proceed as free from bleeding and with as little danger as an ordinary amputation of the thigh. Bier reported a similar case last year, the application of the constricting belt having aided in the success of the intervention. Pagenstecher's patient was a woman of 50 with a sarcoma in the iliac fossa and inside of the acetabulum. The disturbances from the operation were so comparatively mild that on the third day the patient asked to be allowed to get up, but there has been persisting paralysis of bladder and rectum ever since. He is unable to determine whether this paralysis is to be ascribed to the belting constriction or *not*. The patient otherwise is in good general health at present, four months since the operation. It is possible that the constriction injured the nutrient vessels of the conoid distal end of the spinal cord, but he thinks that this isolated mishap should not be allowed to discredit the Momburg technic which offers such advantages for this operation. He has applied it since in another case, for resection of the sacroiliac symphysis; in neither instance was there any disturbance from reactive hyperemia after removal of the constriction.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIII, No. 2, pp. 145-242

84 Behavior of Tubercle Bacilli in Different Organs after Intravenous Injection. W. Neumann and H. Wittgenstein.
85 *Isolation of the Tuberculous. (Welche Massnahmen sind zur Isolierung tuberkulöser Personen zu empfehlen?) A. Bielefeldt.
86 *Tuberculosis in Infants. (Säuglingstuberkulose.) O. Aronade.
87 *F[illegible] able Lymph Glands in the [illegible] tuberkulose.) A. Bauer.

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Berliner klinische Wochenschrift

August 9, XLVI, No. 32, pp. 1477-1516

88 Gout. (Zu [illegible] Falkenstein.
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August 16, No. 33, pp. 1517-1556

93 *Differential Diagnosis of Tertiary Syphilis, Lupus, and Cancer. (Lupus oder tertiäre Lues? Sarkom oder primäre Lues?) A. Neisser.
94 Relations between Resisting Power of Transplanted Mouse Tumor and its [illegible] Structure. (Beziehungen zwischen [illegible] histologischem Bau transplantier- [illegible] A. Murray.
95 Cobra Venom Hemolytic Reaction. (Weitere Mitteilungen über die Hemmungsreaktion menschlicher Sera gegenüber Kobragift.) E. [illegible]
96 Manifold Binding [illegible] Leprosy, etc. ([illegible] f Serum in [illegible] des Komplementes einige [illegible] Bedeutung.) C. Frugoni and S. Pisani.
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hand, the treatment should be just the reverse, as otherwise the patients are liable to succumb in pronounced uremia or from heart complications.

Archiv für klinische Chirurgie, Berlin

XC, No. 1, pp. 1-261. Last indexed Sept. 4, p. 822

73 *Surgical Treatment of Non-malignant Stomach Lesions and Ultimate Outcome. (Chirurgische Behandlung gutartiger
besondere des Magengeschwürs und
mit bes. Berücksichtigung der Spät-

74 Treatment of Subcutaneous Rupture of the Liver and Later Expulsion of Sequester of Liver Tissue. (Subcutane Leberrupter mit späterer Ausstossung grösserer Lebersequester und deren Behandlung.) P. Biernath.

75 *Suction Apparatus as Aid in Surgery. (Verwendung der Ansaugung in der operativen Chirurgie.) F. Krause.

76 *Intravenous Adrenalin-Saline Infusion in Peritonitis. H. Heineke.

77 Fulguration and Radium Emanations in Cancer. (Gebrauch der Fulguration und der Kreuznacher Radiolpräparate bei der Behandlung der Krebse.) V. Czerny.

78 Partial Necrosis of Colon after Resection of the Stomach. C. Goebel.

79 Treatment of Surgical Lesions in Asia. (Behandlung chirurgischer Krankheiten in

80 *Belt Constriction for Exartic
(Ueber die Exarticulatio
nach Momburg.) E. Pagenstecher.

81 Pathogenesis of Appendicitis. Helle.

82 Immunizing Action of Nucleinic Acid. (Immunisirende Wirkung der Nucleinsäure.)

83 Callus Formation after Inju acture.
(Eine typische periostale inter-
nus femoris nach Kniedis

73. Surgical Treatment of Non-Malignant Gastric Disease.—Busch reviews the ultimate outcome in 124 cases of benign stomach affections in which Körte has operated since 1900. The intervention was on account of gastric ulcer and its consequences in 87; duodenal ulcer in 7; stenosis of the pylorus from ptosis or other causes in 16, and from adhesions left by pericholecystitis in 7; caustic injury in 5, and acute dilatation of the stomach in 2. The age of the patients ranged from 14 to 68. The general conclusions are: (1) Nervous stomach affections should never be operated on except that an exploratory laparotomy may be necessary to exclude positively the presence of an ulcer; (2) stenosis from an ulcer and ulcers persisting in spite of systematic and prolonged internal measures indicate preferably retrocolic posterior gastroenterostomy with a circular suture in two tiers, as promising excellent results. If the stomach is extremely flabby and stretched an enteroanastomosis according to Braun's technic may be required as a prophylactic measure. Especially with open ulcer, after-treatment with means to reduce acidity is particularly necessary, possibly accompanied with lavage, and always careful selection of the articles of diet. Resection should be considered when there is the least suspicion of the malignant nature of the tumor, also for severe callous tumors, especially if they intrude on neighboring organs (liver, pancreas). The resection should always be circular, according to Riedel's technic. The conditions in individual cases must decide whether the more radical but more serious resection technic should be preferred to gastroenterostomy.

75 Suction Apparatus as Aid in Operating on Brain Tumors.—Krause has had unusual experience in the removal of brain tumors and has always felt the lack of some means of getting hold of the tumor to draw it out without the need of prying it up from behind. He has recently been using a suction apparatus for the purpose and has found it effective. He used at first something like a Bier cupping glass, with rubber bulb, but has since perfected the technic by connecting the glass cup with the hydrant to form an air pump worked by the vacuum from the running water. Eight large illustrations show the application of the suction apparatus and the advantages from its use. A soft friable tumor in the depths is revealed by the turning back of the bone flap, and the rounded edges of the long narrow glass cup are placed on the most accessible part of the tumor and suction applied. At once the tumor is sucked up into the cup and is held rigidly by the negative pressure, so that the tumor and glass form a solid whole which can be moved and manipulated as a single object, without the necessity for lifting the tumor from behind. When the tumor has been drawn out, its base can be severed like a pedicle. The brain is pushed back with small wads of cotton so that all danger of injury from instruments is avoided. He uses glass cylinders for the cups, from 10 to 55 mm. in diameter, the outer end tapering abruptly to a point, bent downward, and connected by a boiled rubber tube, about half a yard long, with another tube five or six yards long which runs along the floor to the hydrant. His illustrations show the apparatus as used for tumors in the frontal and cerebellar region. In order to keep control of the suction, there is a small round hole in the side of the cylinder, just where the index finger would naturally be applied in holding the cup; by raising the finger air streams in and suction stops at once. One illustration shows a tumor behind the cerebellum, an *Acusticustumor*, which he drew out with a small suction cylinder until the tumor was nearly as long and narrow as the cylinder. He was able to draw out and enucleate by this means a tumor in the hypophysis which was nearly as large as an egg, and to which he gained access through the forehead. He doubts if a tumor of this size could be removed through the small hole at the base of the sella turcica according to Schloffer's technic. He turned back a flap reaching from the longitudinal sinus to the middle of the temporal muscle, exposing to view the entire anterior cranial fossa and part of both temporal lobes and of the frontal lobe on the other side. The patient recovered from the operation and the acromegaly is subsiding, while the diabetes mellitus vanished almost at once. In conclusion, he suggests that the suction apparatus may possibly prove useful in surgery of the lungs and for removal of intrathoracal tumors, retrosternal struma, and also in the small pelvis. The suction cup allows as firm hold of the growth to be removed as the corkscrew which aids so materially in the removal of uterine myomas.

76. Intravenous Adrenalin-Saline Infusion in Peritonitis.—Heineke reports extensive experimental and clinical research, which demonstrates, he thinks, that the main effect of the infusion is due to the salt solution, and that this is more prominent in the cases in which the patient has just lost large amounts of fluid. The effect of the adrenalin is so transient that it can be of little use in peritonitis; its chief field is in collapse, transient in its nature, as in general anesthesia and spinal anesthesia; in shock after severe operations and injuries; in hemorrhage; and possibly also in intoxications and in threatening conditions during infectious diseases.

80. Exarticulation of Hip with Half of Pelvis.—Pagenstecher states that only 7 of the 24 patients on record requiring interileoabdominal exarticulation survived more than a short time after this severe and dangerous operation. Now, however, the application of the Momburg belt constriction has lessened the danger of hemorrhage, and he reports a case in which this technic permitted the operation to proceed as free from bleeding and with as little danger as an ordinary amputation of the thigh. Bier reported a similar case last year, the application of the constricting belt having aided in the success of the intervention. Pagenstecher's patient was a woman of 50 with a sarcoma in the iliac fossa and inside of the acetabulum. The disturbances from the operation were so comparatively mild that on the third day the patient asked to be allowed to get up, but there has been persisting paralysis of bladder and rectum ever since. He is unable to determine whether this paralysis is to be ascribed to the belting constriction or not. The patient otherwise is in good general health at present, four months since the operation. It is possible that the constriction injured the nutrient vessels of the conoid distal end of the spinal cord, but he thinks that this isolated mishap should not be allowed to discredit the Momburg technic which offers such advantages for this operation. He has applied it since in another case, for resection of the sacroiliac symphysis; in neither instance was there any disturbance from reactive hyperemia after removal of the constriction.

Beiträge zur Klinik der Tuberkulose, Würzburg

XIII, No. 2, pp. 145-242

84 Behavior of Tubercle Bacilli in Different Organs after Intravenous Injection. W. Neumann and H. Wittgenstein.

85 *Isolation of the Tuberculous. (Welche Massnahmen sind zur Isolierung tuberkulöser Personen zu empfehlen?) A. Bielefeldt.

86 *Tuberculosis in Infants. (Säuglingstuberkulose.) O. Aronade.

87 *Frequency and Importance of Palpable Lymph Glands in the Supraclavicular Triangle with Pulmonary Tuberculosis. (Zur Frage der Häufigkeit und Bedeutung palpabler Lymphdrüsen in den supraklavikulären Halsdreiecken bei Lungentuberkulose.) A. Bauer.

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Berliner klinische Wochenschrift

August 9, XLVI, No. 32, pp. 1477-1516

88 Gout. (Zur Klärung der Gichtfrage.) Falkenstein.
89 *Polyserositis. v. Marenholtz.
90 *Congenital Torticollis. (Zur Aetiologie des angeborenen Schiefhalses.) M. Böhm.
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cumbed, however, to "aspiration pneumonia" from the tracheotomy. Accumulations of round cells must not be accepted as a sure sign of cancer; nothing but typical carcinoma findings justify this.

97. **Specific Substances in Diagnosis and Treatment of Tuberculosis.**—Mitulescu here gives a summary of the various technics for application of tuberculin in diagnosis and treatment, comparing his own results with those of others and concluding by emphasizing the importance of tuberculin treatment in the early stages of tuberculosis. He calls on the general practitioners as the ones to apply it on a large scale. This is the only way to prevent chronic tuberculosis from becoming "open," and to have the prophylaxis of the disease truly effectual. Nothing can be really accomplished, in prophylaxis, he adds in conclusion, until general practitioners become convinced of the importance of specific treatment of tuberculosis and learn to apply it in the earliest stages of the disease.

Deutsche medizinische Wochenschrift, Berlin

August 12, XXXV, No. 32, pp. 1378-1416

99 *Summer Maximum of Infant Mortality. (Ueber den Sommergipfel der Säuglingssterblichkeit.) H. Finkelstein.
100 *Fatalities from Ileus and its Treatment. (Zur Frage des Ileustodes und der Ileustherapie.) W. Braun and H. Boruttau.
101 Me[illegible] cretion of Intestinal Juice. (Zur [illegible] und Hemmungsmechanismus der [illegible] Molnar.
102 Study of Wassermann Reaction. H. Schlimpert.
103 Satin Wood Dermatitis, an Anaphylaxis of the Skin. (Satinholzdermatitis, eine Anaphylaxie der Haut.) Wechselmann.
104 *Physical Measures in Treatment of Pulmonary Edema. (Zur physikalischen Therapie des Lungenödems.) T. Kulenkamp.
105 *Differentiation of Pernicious from Severe Secondary Anemia by Findings in Ocular Fundus. [illegible] Augenhintergrundsuntersuchungen zur [illegible] zwischen perniziösen Anämien und [illegible] Anämien.) F. Hesse.

99. **Causes of Increased Infantile Mortality in the Summer.**—Finkelstein gives curves showing the infant mortality and the temperature day by day, the peaks in each paralleling each other to a remarkable extent. An extremely hot day is almost inevitably followed by a number of extremely sick infants being brought to the hospital before the close of the twenty-four hours. This is too early for toxic or bacterial influences to make themselves felt so fatally, and he agrees with those who regard this immediate hot-weather infant mortality as due to actual heat stroke; the death should be reported as heat stroke. But these acute cases of heat stroke do not explain the steady increase as the hot weather continues. The subacute indigestion which begins in the hottest weather generally terminates fatally after the extreme heat has subsided, so that the highest mortality is found when the weather has returned to moderate. Extreme heat may lead to severe gastrointestinal disturbances in adults on a hearty diet, and the same must be assumed in regard to infants. As their tolerance for cow's milk under all circumstances is lower than for breast milk, the bottle-fed children will sicken earlier and more severely than breast-fed children. It is also possible that the breast-fed child is more resistant not only to alimentary disturbances, but to the effect of the heat. An important practical conclusion from his views is the necessity for treatment as for heat stroke in the hot-weather ailments of infants. In his experience he has witnessed symptoms suggesting heat stroke in infants during sweating procedures, even in winter. The effect of the high temperature is felt most severely when it is protracted and when the children are kept too warmly clothed and covered up. The latter factor may explain the greater prevalence of these disturbances in the lower classes.

100. **Treatment of Ileus.**—Braun has been experimenting with animals to determine the most decisive factors in the fatalities from ileus. The results show that autointoxication and reflex action are comparatively unimportant factors. The disturbances are the result of interference with the functioning of the intestines and with the circulation in the abdominal cavity. The heart is not primarily involved with ileus in the small intestine unless the clinical picture is complicated by infection. Otherwise in animals as in man the normal heart continues to work continually and powerfully to the very last. At first the intestine above the occlusion increases in size, fills up with intestinal juice in nine hours with an amount corresponding to the total quantity of blood in the animal. All the intestinal vessels are gorged with blood and the intestine above the obstruction is in extreme peristaltic excitement, accompanied by exaggerated secretion of pancreatic and intestinal juice and bile. These views emphasize the necessity in ileus for measures to tranquilize the intestine and regulate the circulation. Opium may accomplish the former and saline infusion the latter, possibly supplemented by a suprarenal preparation.

104. **Physical Measures in Edema of the Lungs.**—Kulenkamp reports a case in which edema of the lungs seemed to be controlled by measures as for artificial respiration. The effect was surprising and the patient was relieved at once. The dyspnea seemed to be most pronounced during expiration, and compression of the thorax at each expiration was kept up for an hour and a half until the patient was entirely at ease. When the disturbances come on more slowly, great benefit may be derived from application of a thermophore to the heart, inducing general sweating. This not only insures better circulation for the heart, but also improves conditions throughout the entire vascular system.

105. **Examination of the Fundus of the Eye for Differentiation of Anemia.**—Hesse states that hemorrhages in the fundus of the eye are an important symptom of pernicious anemia. He found hemorrhage in the retina in 47 out of 50 cases of pernicious anemia, but nothing of the kind was to be detected in 51 cases of severe secondary anemia from chlorosis, hemorrhages or cirrhosis of the liver, nor in 64 cases of cancer, including 29 gastric carcinomas. This absence of hemorrhages in the retina in the cancer cases suggests the importance of this sign for differentiation of anemia of different origins. Positive findings speak for the pernicious form, while negative sustain the assumption of some hidden malignant tumor, presumably in the intestines.

Medizinische Klinik, Berlin

August 1, V, No. 31, pp. 1145-1180

106 Operations on Nasal Septum in Children. (Operationen an der Nasenscheidewand [illegible] Rethi.
107 *Operative Treatment of [illegible] e. (Zur operativen Heilung des [illegible] Hackenbruch.
108 *Organ Disturbances in Tapeworm Hosts. (Organstörungen bei Tänienträgern.) R. Latzel and A. Staniek.
109 Balneotherapy for Children. M. Hirsch.
110 *The Creeping Cure in Treatment of Scoliosis. (Kriechkur in der Skoliosenbehandlung.) G. Müller.
111 Double Stain for Distinguishing Live from Dead Lepra Bacilli. (Unterscheidung lebender und toter Leprabazillen durch Doppelfärbung.) P. G. Unna.

107. **Operative Treatment of Congenital Dribbling of Urine.**—Hackenbruch obtained very satisfactory results in a case of interior fissure of the bladder with epispadias of the urethra in a girl of 12 who had suffered from constant dribbling of urine since birth. He could not find any account of a successful technic in the literature, and devised one for himself, drawing up the neck of the bladder to make a narrow passage and then twisting the canal thus formed, from below (Gersuny), thus inducing compression of the urethra and of the newly formed neck of the bladder. He gives six illustrations of the technic followed, the neck being drawn up with three silk sutures tied separately, working through a suprapubic incision. After an interval intended to be six months, but for various reasons lasting nearly two years, the second part of the technic was applied, twisting the urethra like a corkscrew and fastening it in this position with a silk suture to the labium minus. Normal conditions were restored, even to the normal sensation of desire to urinate and ability to restrain it, and these normal conditions have persisted for four years to date.

108. **Organ Disturbances in Tapeworm Hosts.**—Latzel tabulates the findings in 50 cases. They show that the tenia is liable to have an injurious influence on various organs, both by its toxic products and by reflex action, the resulting disturbances simulating serious primary disease.

110. **Creeping in Treatment of Scoliosis.**—Müller endorses the efficacy of Klapp's creeping method in the treatment of scoliosis, but urges that it should be supplemented by the other usual measures.

Münchener medizinische Wochenschrift

August 10, LVI, No. 32, pp. 1625-1672

112 *Neuroses of Internal Organs. (Neurosen innerer Organe und Erkrankungen der Organnerven.) A. Schmidt.
113 *Local Treatment of Slight Inflammatory Processes in Parturients. (Zur Wertschätzung einer örtlichen Behandlung der leichteren Wundentzündungen des Wochenbettes.) O. v. Herff.
114 *Treatment of Hematocele after Extrauterine Pregnancy. (Zur Behandlung der Haematozele nach ektopischer Schwangerschaft.) P. Esch.
115 *Suture of the Heart. (Zur Herznaht.) H. Flörcken.
116 *Gastric Ulcer in Bavaria Ulcus ventriculi
in München und im Crämer. Id.
(Häufigkeit des Ulcus in München.)
Oberndorfer.
117 *Anemia in Infants and its Prevention. (Anämie des Säuglingsalters und ihre Verhütung.) J. Katzenstein.
118 Treatment of Circumscribed Skin Lesions with Carbon Dioxid Snow. (Behandlung von umschriebenen Hauterkrankungen mit Kohlensäureschnee.) L. Zweig.
119 Hyperkeratosis under the Nails as Roentgen Injury. (Hyperkeratosis subungualis Unna als Röntgenwirkung.) Wehrsig.
120 Roentgen Localization of Foreign Bodies. (Einfache Methode zur Bestimmung des Tiefensitzes von Fremdkörpern mittels Röntgenstrahlen.) C. Müller.
121 Formula for Computing Actual Size of Organs from Roentgen Shadows. (Bestimmung der wahren Grösse von Organen, etc., aus der Grösse des Schattens im Röntgenbild.) R. Geigel.
122 *Suckling and Cancer. (Mutterbrust und Karzinom.) A. Groth.

112. **Neuroses of Internal Organs.**—Schmidt thinks that the proper classification of these affections gives a clew for treatment, and suggests the following three groups: (1) Central (psychogenic) organ neuroses (all partial manifestations of psychoses), or psychoneuroses or, as organ neuroses, the apparently isolated manifestations of the same; (2) peripheral organ neuroses and affections of the nerves of the organs. These include: (a) disturbances originating in the nerves controlling the organ, the vagus and sympathetic, such as tabetic crises, the Adams-Stokes syndrome for which the vagus is responsible, and certain cases of paroxysmal tachycardia; (b) disturbances due to the nervous elements of the organs themselves, such as the Adams-Stokes syndrome due to some affection of the bundle of His, asthma and pylorus spasm; (3) toxoneuroses of the organs, such as lead colic, goiter heart, and the gastrointestinal disturbances of Addison's disease. We know that the toxoneuroses are frequently accompanied by symptoms of insufficiency of the organs involved. Examples of this are the weakness of the heart with goiter heart, myoma, and in the menopause, and the connection of nicotin with arteriosclerosis. It is evident that the parenchyma is injured as well as the nerves. This is also manifest in bronchial asthma (nervous catarrh). On the other hand, in Group 2a, the disturbance is mainly functional. Changes in the heart beat from an affection of the vagus, in case the heart muscle is sound, are not so readily followed by weakness of the heart. The central organ neuroses, Group 1, leave the organ absolutely intact, the whole suddenly vanishing without leaving a trace. The experienced practitioner intuitively draws the line for which research is now striving to supply exact data for differentiation and treatment. Digitalis may help in heart disturbances due to an affection of the vagus but it fails in those due to the bundle of His and with goiter heart. The central heart neuroses are not benefited by digitalis or carbonated baths any more than is psychogenic dyspepsia benefited with diet and lavage. They are helped only with psychotherapy and general tonic measures and sedatives. The peripheral organ affections for which the vagus is responsible respond effectually to atropin. Unfortunately, the means of combating the autotoxic neuroses are still far from satisfactory, but the growing knowledge of the action of the special organ extracts, such as suprarenal extract, justifies the hope that much good may yet be accomplished in this line.

113. **Local Treatment of Slight Inflammatory Processes in Parturients.**—The tabulated details of v. Herff's obstetric cases during the last twelve years demonstrates, he thinks, the superiority of his method of managing slight local inflammation during confinement. His aim is to stimulate the vagina and uterus to self-drainage. This he accomplishes with hot vaginal douches, ergot internally, and if necessary, a flexible metal drain introduced into the uterus.

114. **Treatment of Extrauterine Pregnancy.**—Esch reports a case in which the hematocele putrefied; vaginal incision with drainage had proved inadequate. In another case menacing after-hemorrhage occurred. He now operates at once to avert such complications and in nineteen cases of extrauterine pregnancy has had no mortality except with one moribund patient.

115. **Suture of the Heart.**—Flörcken reports another successful case and discusses the chances for surgical intervention in injury of the heart, the diagnosis, indications, technic and after-treatment with a historical review of the subject. The pericardium became adherent in some of the patients later, and on account of this danger of adherence he commends the advantages of definite resection of the rib to permit immobilization of the anterior wall of the chest.

116. **Frequency of Gastric Ulcer in Bavaria.**—Crämer has been collecting information in regard to the prevalence of gastric ulcer in Munich and in the country districts and states that an ulcer or an ulcer scar is found in from 5 to 8 per cent. of all the cadavers examined at Munich, while in 21 rural districts the proportion is very low in 9 and unusually high in 9 others. One practical conclusion of his investigations is that a vegetable diet does not by any means insure immunity against gastric ulcer.

117. **Prevention of Anemia in Infants.**—Katzenstein refers to the anemia without appreciable cause, and experience has convinced him that these anemic infants are suffering from lack of iron. This form of anemia is more common in families in which the infants are allowed nothing but milk while it is rare when the children early eat at the family table. He does not give iron directly but during or after the third month allows once a day a little meat broth with one-half and later the whole yolk of an egg. During the fourth and fifth months gruel is given once or twice a day, made of zwieback with butter, milk, salt and sugar to which the egg yolk is added. By the sixth or ninth month he gives spinach; by the tenth and eleventh month a little meat. When the child is a year old he reduces the milk to a pint or a pint and one-half a day and accustoms the child to a mixed diet. By this means, the anemia is prevented and always cured when developed. Infants seem to feel the need of iron mostly in the fourth month, and by giving them in this way a little food that contains iron it is possible to keep the hemoglobin at 100 per cent. The children take this diet without disturbance. Yolk of egg and spinach contain 22 and 35 mg. iron in 100 gm. of dry substance, while cow's milk contains only 2.3 mg. He thinks it is not a mere coincidence that none of the children given iron in this way has ever developed rachitis. Milk does not contain enough iron for the proper development of the infant, and sooner or later the child will suffer, especially about the fourth or sixth month, at which time a little mixed food containing iron is given whether the child is getting breast milk or is bottle-fed.

122. **Cancer and Suckling.**—Groth presents some tabulated statistics which demonstrate that women who nurse their infants seem to be protected in much larger measure against cancer of the breast and genital organs than other women. The proportion of cancers grows less with the longer duration of the suckling period.

Wiener klinische Wochenschrift, Vienna

August 12, XXII, No. 32, pp. 1119-1144

123 *Clinical Symptoms of Hypertrophy of the Left Ventricle. (Ueber mehrere klinische Symptome der Hypertrophie des linken Ventrikels.) L. Kurt.
124 *Conne Tuberculosis. S. Reines.
125 Impro nann Reaction. (Warum ist
die Wassermannschen Luesreak-
tion Modifikation vorzuziehen?)
König.
126 Incarceration of Appendix in Hernial Sac. (Kasuistischer Beitrag zur Kenntnis der Appendizitis und Appendixeinklemmung im Bruchsack.) A. v. Winiwarter.

123. **Clinical Symptoms of Hypertrophy of the Left Ventricle.**—Kurt calls attention to a symptom which he has been studying for five years, the increased loudness of the first sound over the left ventricle just above the apex. In normal conditions the second sound is weaker here than over the adjoining part of the right ventricle. The louder first sound over

properly carried out, according to the directions given below, the sufferings of the patient are actually but little, and the treatment goes on to a successful issue.

The most useful combinations in my hands hav defects,
the compound cathartic pills of the P ency; (6) as
which contain: in the hypertrophy

℞. e frequent weakening of the first

Extracti colocynthiding apex beat" is partially the result of
Hydrargyri The lifting apex beat prevents the shaking of the thorax during systole, as it is lifted with the apex. An artificial murmur is produced in the stethoscope with this lifting apex beat, which renders the perception of the first sound more difficult. The louder second sound with hypertrophy is probably due in part to the enlargement of the aorta. Bamberger was the first to emphasize the importance of the lifting apex beat with pronounced hypertrophy of the left ventricle, and also the importance of the louder second aortic sound for the diagnosis of the condition.

124. **Relations Between Scleroderma and Tuberculosis.**—Reines reports thirteen cases which confirm the connection between scleroderma and tuberculous infection. Energetic tuberculin treatment seems to have been responsible for the stationary phase into which the scleroderma entered in two cases. It is possible, he adds, that the sympathetic nervous system might be influenced by Roentgen-ray exposures, as Schwarz has found in diabetes and exophthalmic goiter. The tuberculin tests were positive in all his cases of generalized scleroderma, and the tendency of the tubercle bacillus to induce sclerotic processes is another argument in favor of this assumption. Inoculation of animals also gave positive results.

Zentralblatt für Gynäkologie, Leipsic

August 14, XXXIII, No. 33, pp. 1137-1176

127 Extraperitoneal Cesarean Section.
serschnitt.) K. Reifferscheid.
schnitt nach Latzko-Döderlein.)
tonealer Kaiserschnitt, die Frucht in positio occipitalis
sacralis.) Nacke. (Fall von ex
nach Sellheim.) G. Heinric
Kaiserschnitt nach Latzko.)
(Ueber den extraperitonealen
(Peritonealer oder extraperitor
Laubenburg.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 12, XXX, No. 96, pp. 1009-1016

128 *Treatment of Chlorosis. (Terapia della clorosi.) R. Ferrario.

128. **Treatment of Chlorosis.**—Ferrario relates his experience with twelve cases of chlorosis in which he supplemented iron tonics with hot baths to induce sweating and thus stimulate the general metabolism and blood production. The sweating seems to mobilize the deposits of iron in the organism. The metabolic findings, as he tabulates them for each of his cases, confirm the efficacy of this method of treating chlorosis.

Riforma Medica, Naples

August 9, XXV, No. 32, pp. 870-890

129 *Polymorphous Septicemic Fevers. (Sulle febbri e febbricole setticemiche polimorfe.) G. Rummo.
130 Relations between Diabetes and Islands of Langerhans. (Contributo anatomo-clinico allo studio del rapporto tra diabete mellito ed isole del Langerhans.) G. Rubinato.
131 *Lip Tuberculin Test. (La reazione locale della tubercolina saggiata su talune mucose.) G. Pollaci.

129. **Septicemic Fevers.**—This is the first of a series of twelve lectures delivered by Rummo on the various septicemic fevers, typhoid, paratyphoid, Malta fever, etc.

131. **Local Tuberculin Reaction on the Mucosa Inside the Lip.**—Pollaci has applied the local tuberculin test to the mucosa of the mouth and states that in 10 cases the reaction was pronounced even when the ocular reaction and reaction with the test on the mucosa of the urethra gave dubious findings. The test applied to 20 persons, healthy or with other diseases, gave constantly negative findings. The instillation of the tuberculin on the absorbing mucous surface in the mouth is very simple; a single drop of tuberculin is placed on one side of the frenulum as the lower lip is drawn out. The drop of tuberculin is allowed to remain undisturbed until completely absorbed, which is soon accomplished. The saliva does not interfere with the reaction, as normally the saliva does not accumulate at this point. The reaction ranges from slight con-

the distressing symptoms of the narcotic withdrawal
will come exudate to
edema and minute ulceration, the symptoms all subsiding in from six to twenty-four hours. He is convinced that the substitution of the lip test will be found an improvement as it is free from the possible dangers of the ocular test, while it is more sensitive and reliable than other technics.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

PHILADELPHIA GENERAL HOSPITAL REPORTS, Volume VII, 1908. Edited by Herman B. Allyn, M.D. Cloth. Pp. 272. Philadelphia, 1909.

THE PRINCIPLES AND PRACTICE OF MEDICINE. By William Osler, M.D., Fellow of the Royal Society. Seventh Edition. Cloth. Pp. 1143. Price, $5.50. New York: D. Appleton and Company, 1909.

PARENTHOOD AND RACE CULTURE: An Outline of Eugenics. By Caleb Williams Saleeby, M.D., Ch.B., F.Z.R., Edin., Fellow of the Royal Society of Edinburgh. Cloth. Pp. 389. Price, $2.50, net. New York: Moffat Yard and Company, 1909.

PRACTICAL DIETETICS, with Special Reference to Diet in Diseases. By W. Gilman Thompson, M.D., Professor in the Cornell University Medical College. Fourth Edition. Cloth. Pp. 928, with illustrations. Price, $5. New York: D. Appleton and Company, 1909.

MEDICAL SOCIOLOGY: A Series of Observations Touching on the Sociology of Health and the Relations of Medicine to Society. By James Peter Warbasse, M.D., Surgeon to the German Hospital. Cloth. Pp. 355. Price, $2. New York: D. Appleton and Company, 1909.

TUBERCULOSIS. A Treatise by American Authors on Its Etiology, Pathology, Frequency, Semeiology, Diagnosis, Prognosis, Prevention and Treatment. Edited by Arnold C. Klebs, M.D. Cloth. Pp. 939, with 3 colored plates and 243 text illustrations. Price, $6. New York: D. Appleton and Company, 1909.

New Patents

Recently granted patents of interest to physicians:

928356.	Capsule filler. P. H. Brown, Temple, Tex.
928752.	Invalid's table. M. A. Hawley, Elk Grove, Cal.
928539.	Lotion. G. Pucciarelli, Jersey City, N. J.
928884.	Inhaler. V. E. Randall, Battle Creek, Mich.
40158.	Design., massaging-implement case. A. H. Apfel, Chicago.
929383.	Maunfacture of a disinfectant. A. Brick, Vienna, Austria-Hungary.
929281.	Muscle-testing machine. A. A. Brodeur, Worcester, Mass.
929199.	Inhaling and heating device. H. C. Dreisvogt, Santa Clara County, Cal.
929307.	Utensil sterilizer. G. Holden, Merchantville, N. J.
929610.	Commercial package of medicine. J. K. Lilly, Indianapolis.
929166.	Catamenial bandage. I. L. Plamondon, Provemont, Mich.
299112-3.	Vacuum massaging machine. C. B. Rider, Ocean City, N. J.
929254.	Vaporizer. Z. G. Sholes, New York.
929524.	Crutch. C. A. Weaver, Roswell, Ga.
929357.	Combined bed-sheet and shelter tent. F. Whitney, Cimarron, N. M.
93023.	Sterilizing fluids. C. B. Bartley, Pittsburg, Pa.
930031.	Supporter. H. Bierhoff, New York.
929,833.	Surgical instrument. R. L. Combs, Kerrville, Tex.
13001.	Reissue, making camphor. C. Glaser, Baltimore.
929947.	Electric needle spray bath brush. H. Hertzberg, New York.
929677.	Automatic liquid-dispensing cabinet. E. Lavens, New York.
930203.	Electrical instrument for pyrogravure and surgical purposes. L. Mandarelli, Paris, France.
929963.	Disinfecting composition. A. W. Lyda, W. W. Cubbison, New Castle, Pa., and E. C. Robinson, Lowellville, Ohio.
930312.	Vaginal syringe. F. A. Neven, Denver.
930002.	Window tent. W. E. Walsh, Morris, Ill.
930009.	Combined water bag and syringe. W. G. Williams, Vinita, Okla.
930528-9.	Ice-cream-containing cabinet and soda fountain. W. Buttler, Indianapolis.
930841.	Inhaler. H. P. Collins, East Orange, N. J.
930768.	Obstetric appliance. F. E. Kelly, Kewanee, Ill.
930977.	Vaporizer for disinfectants. G. Leininger, Chicago.
930686.	Microtome. W. L. Patterson, Rochester, N. Y.
930619.	Antiseptic card ticket, and package-delivering case. E. E. Russell, Los Angeles, Cal.
930439.	Obstetric pad. M. H. Topping, Flat River, Mo.
930909.	Making extracts. W. Wiegand, Merseburg, Germany.
930910.	Pasteurizing and cooling process. J. Willman, Derby, Conn.
931025.	Pasteurizing holding tank. J. E. Amend, Milwaukee, Wis.
931113.	Syringe. A. Bean, New Brunswick, N. J.
931378.	Adjustable support and aseptic trays. C. F. Booth, Canandaigua, N. Y.
931030.	Sprayer. D. O. Bowman, Rockford, Mich.
931034.	X-ray apparatus. E. W. Caldwell, New York.
931612.	Knife for surgical purposes. E. Huttmann, Hamburg, Germany.
931219.	Douche pan protector. E. Reynolds, North Salem, N. Y.
931520.	Emulsion and producing same. J. Stockhausen, Crefeld, Germany.
931240.	Atomizer. R. F. Vanner and A. W. Brown, London, Eng.
931539.	Bed or douche pan. B. C. Williams, Stamford, and A. C. Scott, Temple, Tex.

The Journal of the
American Medical Association
Published under the Auspices of the Board of Trustees

VOLUME LIII CHICAGO, ILLINOIS, SEPTEMBER 25, 1909 NUMBER 13

Original Articles

THE OBLITERATION OF THE CRAVING FOR NARCOTICS

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If some years ago any one had told me that it was possible to take away the desire for morphin, cocain, or alcohol in less than five days with a minimum of discomfort and suffering to the patient, I should have felt justified in treating the statement with a polite skepticism. Such, however, is the fact, if the treatment which is about to be described in this article is carefully carried out. I do not doubt that in my turn I shall be met with skepticism, and perhaps ridicule, and more especially from those members of the profession who have struggled and toiled to break up the morphin and cocain habits. Heretofore there has been nothing so discouraging, so trying to both physician and patient, as the endeavor to eradicate the craving for these drugs.

In my service in the alcoholic wards of Bellevue Hospital most of the patients were simply in the various stages and degrees of alcoholism, but there was always about 1 per cent. among the men and 2 per cent. among the women who were addicted to morphin and cocain. Many of these patients did not wish to be cured; many did earnestly desire to be rid of their enslaving habit. Many were the forms of treatment and drugs with which I tried to break off the habit and take away the craving. In a very few cases I sometimes believed that I had succeeded, but even in these cases there was always a doubt in my mind. In the vast majority of patients I knew that I had failed.

Five years ago Mr. Charles B. Towns, of New York City, informed me that he had a treatment by the use of which it was possible in about three days to remove the craving for morphin and cocain and also for alcohol. After this desire for the narcotics was gone the patients would be able to remain free from the use of morphin, and if it was worth while to the patients it was possible for them to abstain from the use of cocain and alcohol. Mr. Towns, not being a physician, was not bound to tell me the ingredients of this treatment. I begged him to publish it and to put it on an ethical basis, as otherwise I could not use it, but at that time it did not seem expedient for him to do so. Recently he has made the treatment known in all its details to the Opium Congress at Shanghai, and on his return from China he has given me the full details of the treatment and I have been using it in Bellevue Hospital during the last two months.

While the treatment was still unknown to me, and before I used it, I watched Mr. Towns treat various patients addicted to morphin, cocain and alcohol, and found that the claims he made for the treatment were true. I have, therefore, watched patients who ceased the use of their drug five years ago and have not returned to it, and recently I have myself carried out the treatment indicated below.

There are so many factors to be considered in treating those addicted to narcotic drugs that there is no intention here to claim an infallible cure. We are dealing very often with the morally perverted, with those who have been suffering mental or physical pain, with those who have endeavored to stimulate their flagging abilities to ward off failure in life and to spur themselves on by means of these drugs in the hope of succeeding where failure seemed inevitable. Every morphin habitué knows the ease and sureness with which morphin will relieve pain and distress, and if once off the drug and the temptation returns there is a full knowledge of how it may all be relieved. There is no stimulant like cocain, which so fully gives the feeling of being able to do all that one hopes and dreams possible; and there is no drug which so gives the feeling of physical and mental well-being. Added to this, after a few months' use of cocain, there arises a form of persecutory insanity which convinces those addicted to the drug that every one and all the world is against them, and they refuse to listen to any advice. Most alcoholics do not desire to cease from their drinking. When once the habit becomes thoroughly formed, they do not become drunk from haphazard drinking, but they deliberately drink to excess that they may blunt the knowledge of their unhappiness and the realization of their misery and their environment. Alcohol also in many cases brings with it actual physical lesions in the nervous tissues, so that with a deteriorated mentality the higher functions of the mind are destroyed.

The specific in this treatment is the old 15 per cent. tincture of belladonna and the fluid extract of xanthoxylum (prickly ash) and the fluidextract of hyoscyamus mixed in the following proportions:

℞.	gm.	
Tincturæ belladonnæ	62	℥ii
Fluidextracti xanthoxyli		
Fluidextracti hyoscyami āā	31	℥i

While this specific is being given, the patients do not suffer from the intense diarrhea which usually accompanies the withdrawal of morphin. On the contrary, the most energetic, drastic, cathartic medication is necessary to obtain the desired elimination and to make their bowels move satisfactorily. This cathartic medication forms one of the crucial points in the treatment. Unless it is properly carried out the treatment will fail and the patients suffer intensely and to no avail. If properly carried out, according to the directions given below, the sufferings of the patient are actually but little, and the treatment goes on to a successful issue.

The most useful combinations in my hands have been the compound cathartic pills of the Pharmacopeia, which contain:

℞.	gm.	
Extracti colocynthidis compositi......	08	gr. i⅓
Hydrargyri chloridi mitis.......... .	06	gr. i
Cambogiæ	016	gr. ¼
Resinæ jalapæ	02	gr. ⅓

And also the pilule catharticæ vegetabilis:

℞.	gm. or c.c.	
Extracti colocynthidis compositi.......	06	gr. i.
Extracti hyoscyami		
Extracti jalapæ ....āā	03	gr. ss
Extracti leptandræ		
Extracti resinæ podophylli..........āā	015	gr. ¼
Olei menthæ piperitæ................	008	M. ⅛

To these last I have added in each pill 1/10 (6 mg.) of a grain of the oleoresin of capsicum, ½ gr. (30 mg.) of ginger, and 1/25 minim (.0025 c.c.) of croton oil. I also found that the ordinary stock preparations of compound cathartic pills were too dry to be effective. I, therefore, had made up fresh masses of these preparations, and the mass equivalent to each pill put into a capsule. The preparations kept their freshness, and their effectiveness was very noticeably increased. I also had put in capsules blue mass in five-grain doses. I have thus gone into details because of their importance.

For brevity, I shall hereafter refer to the compound cathartic pills as C. C. pills, and the vegetable cathartic pills, as modified above, as B. B. pills.

The treatment of a case of morphin or cocain is as follows: Before beginning the treatment, give four C. C. pills and five grains of blue mass. It is also wise at this time to give an enema of soapsuds to clean out the rectum and sigmoid thoroughly. When these pills have begun to act, begin with the specific, 6 to 8 minims, and give it every hour throughout the treatment, or until some signs of belladonna intoxication are observed. Every six hours, increase the specific 2 minims until 14 or 16 minims are being taken every hour. Do not increase above 16 minims. If the signs of belladonna intoxication are noticed, such as dilated pupils, dryness of the throat, red rash, or a rapidity and incisiveness of speech, or sometimes a beginning delirium, stop the specific. When these belladonna symptoms have subsided begin the specific again in 8-minim doses. Some patients are very susceptible to belladonna, and one may have to begin again with 4, 5 or 6 minims. Give with the first dose of the specific from one-half to two-thirds of the usual total daily dose of opium, morphin, or cocain which the patient is taking at the time of his treatment. Divide this amount of narcotic in three doses and give them at half-hour intervals, by mouth or by hypodermic as the patient is accustomed to take it. After the first dose of the specific, wait fourteen hours and then give four C. C. pills and five grains of blue mass; again, six hours later, repeat the four C. C. pills or give four to six B. B. pills. It is essential that the cathartic should act at this time, and, if the above amounts do not produce the desired action within three or four hours, they must be repeated with five to ten grains of blue mass. It is astonishing how difficult it sometimes is to obtain a cathartic action at this period, but cathartics must be persisted in until a movement is obtained. If this is not done, the patients are liable to begin to vomit, and the distressing symptoms of the narcotic withdrawal will come out in full force. An ox-gall enema is sometimes of assistance.

After the bowels have acted, but not before, one-third or one-half the original dose of the narcotic may be given. This will make the patient comfortable and contented and ready for the final stage.

Twelve hours after the second dose of the narcotic again give 4 C. C. pills or 4 to 6 B. B. pills with five grains of blue mass, and six hours later give an ounce or more of castor-oil disguised in coffee or orange juice, but not in whiskey. Just before the castor-oil acts, one may have to give from two to five grains of codein phosphate hypodermically or by mouth to quiet the nervousness and discomfort. This is not always necessary, but it adds to the comfort of the patient and does not tie up the secretions as does opium or morphin. The castor-oil at this time will produce a characteristic stool, which shows that the entire treatment may cease. This is a liquid green stool, composed of mucus and bile. When this stool occurs, or shortly afterward, the patients often will feel suddenly relaxed and comfortable, and their previous discomfort ceases. The transition from discomfort to relaxation and contentment is often strikingly marked.

After the patient has been under treatment for thirty hours, one should begin to give some cardiac stimulant, such as strychnin, 1/30 to 1/60 grain, every three hours, or digitalis or strophanthus, either one of these separately or in combination. These tend to overcome the relaxation of the vascular system, which in these patients often produces a feeling of exhaustion.

During the treatment the patients should be given a regular diet of easily digested food, such as eggs, cereals, bread and butter, and vegetables; coffee or tea if they desire it. Many of these patients have a good appetite throughout and eat abundantly; some, of course, do not, and, beginning in a poor physical condition, do not begin to eat abundantly until after the treatment is ended. After they are through the treatment, their appetite becomes voracious, and during the first week care must be taken that they do not overeat, which they are very prone to do. If their stomachs should become overloaded the discomfort will often make them feel as if they were suffering from the symptoms of withdrawal of their accustomed narcotic. If this occurs, the best thing to do is to give them an emetic, and their distressing symptoms will soon cease.

The treatment of alcoholics with this specific differs slightly from the treatment of the morphin or cocain habitué. The same specific is used and in the same dosage, but it does not have to be continued for so long a time, although there may be some exceptions. Much closer observation is necessary in treating the alcoholic in regard to the symptoms of the intoxication of belladonna. The alcoholic is more sensitive to the belladonna effects. This is only a general rule, because, no matter what narcotic drug an individual may take, or how accustomed he may be to enormous doses of any given narcotic, he may have a marked idiosyncrasy toward any other drug. If, however, there is an idiosyncrasy against belladonna this sensitiveness will show within six or eight hours, no matter which one of the three narcotics under discussion the patient has been taking. The alcoholic is more prone to show a slight delirium from belladonna than are the patients who take morphin or cocain, and often a good deal of shrewd observation is necessary to differentiate the beginning

TABLE OF TREATMENT OF PATIENTS ADDICTED TO NARCOTICS

Case.	Sex.	Age.	Duration of Habit, yrs.	Drugs.	Daily Dose, Gm.	Mode of Admin.*	Alleged Cause.	State on Admission.	Initial Dose Drug, Gr.	Hours of Subsequent Doses.	No. Hours Specific Medication.	Average Hourly Dosage, Drops.	Hour Typical Stool Appeared.	Day of Discharge	Complications
1.	F	33	12	M	18	h	Pain after operation.	Emaciated, depressed.	7	26-38-60	58	12	36	14	Vomiting.
2.	M	33	11	M	25	h	Experiment. with drug.	Good.	6	28-39-60-63	58	11	58	11	
3.	F	45	⅔	H	4	h	Pain and nervousness.	Weak and nervous.	1	13-24-35-38	52	11	52	10	
4.	M	33	2	M	12	h	Pain after operation.	Good.	8	22-33-43-53	58	10	50	13	
5.	F	43	1½	M	12	h	Pain, acute rheumatism.	Good.	8	24-35 52-58-82	50†	9	44		Continued nervousness relieved by supplementary treatment.
6.	M	24	8	M	30	h	Pain.	Fair.	2	17-36	40	11	36	13	
			3	C	15	h	....		15	24-36	64	10	46	8	
7.	M	32	3	M	6	h	Acute rheumatism.	Weak and despondent.	2.5	25-67	45	12	43	11	
8.	M	24	¼	M	1	h	Rheumatism.	Good.	0.5	25	35	11	34	4	
9.	F	24	⅔	M	2	h	Prevent threat. abort.	Weak and nervous.	1		30	10	38	5	
10.	M	38	3	M	10	h	Stone in bladder.	Good.	4	24-32-41-47-53 11-21-27-35-48 54-64-74-81-97	42†	9	41		Bad condition. A previous "fake" treatment made this long course necessary. Final result excellent.
										101-111	123	3-10		26	
11.	M	50	4	M	2	m	....	Weak and hypochondriacal.	1	25	57	11	57	9	
12.	M	36	4	M	6	h	....	Fair.	3	23	48	10	48	12	
13.	F	27	⅔	M	4	h	Pain.	Good.	2.5	15-25-37	40	13	35	12	
14.	F	30	⅓	M	6		Gastralgia.	Fair.	2	36	54	12	55	9	Slight dyspnea due to heart.
15.	M	27	1½	M	7	h	Painful disease.	Weak and despondent.	5	26-33	61	10	59	7	Slight elevation of temperature.
16.	M	35	1/6	M	4	h	Alcoholism.	Fair.	2	14-27	48	11	48	12	
17.	F	59	20	M	12	m	By Phys. pain.	Feeble, nervous.	6	22-34	46	12	46	13	
18.	M	58	3	M	1	h	Grief, death relative.	Feeble, depressed.	0.5	26	56	9	58	13	
19.	M	35	⅔	M	30	m	Pain after operation.	Good.	20	26-38	50	8	41	11	
20.	M	58	12	M	5	m	....	Good.	3	24-38 7-22	49	10	47†		Persistent nervousness removed by supplementary treatment.†
										36-60	114	3-12		14	
21.	F	32	8	M	10	h	Environment.	Fair.	12	24 hrs. 4 grs. 52 hrs. Cod.	52	13	48	22	
22.	F	23	3	M	12	h	Prescribed following typhoid.	Poor.	8	18 hrs. 2 gr.	52	13	48	11	Alcohol.
23.	F	30	7	M	12	h	Prescribed during illness.	Poor.	8	24 hrs. 2 gr. Cod. 5 gr. 47 hrs.	47	8½	47	12	
24.	F	28	8	M	10	h	Environment.	Very poor.	5	23 hrs 3 grs.	49	12	49	14	Anemia.
25.	M	32	1½	M	5		Lumbago.	Good.	2	30 hrs. 1 gr. 54 hrs. 5 Cod.	54	13½	54	10	Alcohol.
26.	M	39	3	C	12		Nasal catarrh.	Fair.	4	32 hrs. 1 gr.	40	19½	40	8	
				M	5				6	26 hrs. 2 gr.	45	11	45	17	
27.	M	36	2	M	6	m	Following operation.	Good.		22 hrs. 3 gr. Cod.					
28.	M	50	7	L	2 doz.		Following diarrhea.	Good.	2	24 hrs., oz. 1 Laudanum; 40 hrs. Cod. gr. v.	47	11	47	6	

*M stands for morphin; C for cocain; H for heroin; L for laudanum; h for hypodermically, and m for by mouth.
† Supplementary treatment indicated in text.

delirium of belladonna from the ordinary delirium of alcohol. The belladonna delirium is, I think, a less furious and less pugnacious delirium than that of alcohol. The patients are more persistent and more insistent in their ideas, and more incisive in their speech concerning their hallucinations than is the alcoholic. The hallucinations of alcohol are usually those of an occupation delirium; those of belladonna are not. The various hallucinations of alcohol follow each other so quickly that a man is busily occupied in observing them one after another. The belladonna delirium is apt to be confined to one or two ideas in which the patient is very insistent.

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℞.	gm. or c.c.		
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Morphinæ		008	gr. ⅛
Tincturæ hyoscyami	2		ʒss
Tincturæ zingiberis		6	m. x
Tincturæ capsici		3	m. v
Aquæ ad	15		℥ss

This can be given and the dose repeated in an hour, with or without one or two drachms of paraldehyd.

If these are not effective within two hours, or even less, and the patient is of the furious, thrashing, motor type, a hypodermic injection of the following will almost invariably quiet him:

℞.	gm. or c.c.	
Strychninæ sulphatis	002	gr. 1/30
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Apomorphinæ hydrochloridi	006	gr. 1/10

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I believe it wise to give most alcoholics 1/60 to 1/30 of a grain of strychnin every four hours. In the young robust alcoholic this may not be necessary, but in the majority of those at the end of a protracted spree it is more often indicated than not. Fourteen hours after the beginning of the specific the patient should again be given a cathartic. One must judge here from the severity of the action of the 4 C. C. pills whether the same dose should be repeated, or whether only 2 C. C. pills with five grains of blue mass should be given. Although I have never seen one of these patients overphysiced, we must treat them as individuals and not fall into the dangerous habit of routine treatment.

At this stage of the treatment the young full-blooded alcoholics may need a further dose of the hypnotic, and one may be able to carry them through the entire treatment without any alcohol; but the older alcoholics and those in a weakened and poor physical condition should have with their milk one or two ounces of whiskey about four times a day. This whiskey and milk is to be given only for the first twenty-four hours. During the second twenty-four hours probably only two doses of whiskey will be required, and after that it should not be given at all.

After the second dose of cathartics has acted, if the patients begin to show the characteristic green, mucus stools, they should be given an ounce of castor-oil, and from this dose the characteristic stool, as described under morphin, will appear and the treatment may cease. If, however, the green stool does not begin to appear at this time, further C. C. pills should be given, and as soon as the green stool begins to appear the castor-oil should be given.

After this treatment, with its vigorous elimination, these patients will feel languid and relaxed, but there is no craving for the alcohol. For the next two or three nights, if they can not sleep, they should be assisted with some hypnotic, such as sulphonethylmethanum (trional), and they should be given at regular intervals any good vigorous tonic that does not contain alcohol but will act quickly. For at least a week following this treatment they should continue their tonic, and they should live on a simple diet which is readily digested, but have an abundance of food.

It seems well to reiterate here, and to emphasize in the strongest way possible, that this treatment is not an infallible cure for alcoholism, for there is no such cure short of the grave. This does obliterate the craving, and establishes a patient's self-confidence to go on without alcohol; it will do all that can be done for the man who honestly desires to be helped; but as sure as that man lives, and just so long as he lives, he can not touch alcohol in any form whatsoever without danger of a relapse.

In the above description of the treatment for morphin, cocain or alcohol, I have spoken as if the patient was taking a single drug. Very frequently we encounter patients who are taking morphin and cocain or morphin and alcohol. When this treatment is given to the cocain habitué who is taking only cocain, or when morphin and cocain are combined, the patients sleep almost continuously throughout the treatment. Cocain is usually taken as a stimulant, an antidote against the depressing effects of the morphin, and this should never be forgotten; therefore, the initial dose of the morphin, in the very beginning of the treatment, when the two drugs are combined, should be smaller than when morphin alone is taken. Cocain is so strong a stimulant that when it is withdrawn it is often necessary, from the very beginning of the treatment, to give a stimulant, such as strychnin, instead of waiting thirty hours, as stated above.

The familiar symptoms in morphin withdrawal, such as intense diarrhea, intense joint and abdominal pains, and muscular contraction, do not occur when this treatment is properly carried out. They are most likely to appear just before the second cathartic acts, and for that reason, as emphasized above, the cathartic action must be obtained at this time. If this is not done, the patients are certain to have trouble.

The accompanying table gives in abbreviated form the course of the treatment in a number of patients and gives a statistical view of the various types of patients and the duration of their treatment. The duration of stay in the hospital may seem excessively long, but many patients remained in order that they might be built up physically after their treatment. Their craving for their drug ceased when the characteristic stool occurred.

As is well known, morphin is often taken to smother the pain of some underlying disease, or the distress of some disturbance of function. If these causes still exist after the morphin has been eliminated, the evidence of this former disease or this disturbed function will come to the surface again. At times the narcotic addiction is but a symptom of some abnormal mental state which is only diagnosticated after the narcotic craving in the patient has been removed. This treatment is not a cure-all for disease, a rehabilitator of all the disturbed functions of the body, but if properly carried out it will obliterate the craving for the narcotic and the patient starts anew where he was before taking the narcotic.

The details of this treatment have been given so minutely because it is necessary that they should be carried out, for the success of this treatment depends on the conscientious adherence to its many details. Unless this adherence is given, this treatment will probably not succeed. A successful issue is endangered when an attempt is made to carry out the treatment in the patients' homes and in their accustomed environment. They must be placed where they are alone and where they can be carefully watched. Morphin habitués never begin a treatment with any confidence of its success, but invariably with a dread of the distressing withdrawal symptoms. They will secrete the drug in the most unexpected places, and they are the most sly and resourceful creatures on earth, especially those who have ever tried to break it off. No physician is capable of taking this treatment himself and carrying it through successfully. If it is attempted, the old medical adage that the doctor who treats himself has a fool for a patient will be strikingly exemplified.

This treatment does not offer a cure of the perverted habits of the human race, or a regeneration of the mentally defective. It will obliterate the craving for narcotic drugs, and that is all that is claimed for it.

36 East Thirty-first Street.

THE PREVALENCE OF RABIES IN THE UNITED STATES *

JOHN W. KERR, M.D. AND A. M. STIMSON, M.D.
Public Health and Marine-Hospital Service
WASHINGTON, D. C.

The identity of rabies as a definite disease appears now to be generally accepted, although there is still some question as to its etiology. The impression has prevailed, however, that the prevalence of the disease among both man and animals was exaggerated and that press reports of rabies among animals were in most instances erroneous.

That rabies has been endemic in the United States for more than a hundred years is shown by reports of cases and references to the disease in the medical literature from time to time during that period.

In reviewing the history of rabies in America, Ravenel states[1] that the first outbreak was reported from Boston in 1768, that it appeared in Philadelphia in 1779, that it was prevalent throughout the Northern states in 1785, and that soon after that time it spread to the Southern part of the country.

Reports of the disease have also appeared in newspapers from time to time for over a century; one of these, published in 1798 and recently quoted by Peters,[2] indicates that the disease prevailed in Massachusetts at that time.

There has undoubtedly been considerable variation in the prevalence of rabies from decade to decade, which fact has been responsible for inquiries in the past regarding the disease. Outbreaks in Massachusetts and other places have been observed within a year or two and invited attention to the desirability of further studies as to its general prevalence at the present time, and the means necessary for its control.

The Legislative Council of the American Medical Association, which met in Chicago, Dec. 10, 1907, adopted resolutions to the effect that rabies should be investigated by the U. S. Public Health and Marine-Hospital Service with the view to its prevention and control.

Provisions for investigations of rabies as it affects man had previously been included in a measure which was introduced into the Sixtieth Congress, and which it was expected would become a law. In view of the adoption of the above-mentioned resolution, however, it was decided immediately to resume laboratory investigations and to institute preventive treatment for the protection of persons bitten by rabid animals.

The Surgeon-General accordingly instructed the Director of the Hygienic Laboratory to undertake the preparation of rabies virus in connection with other investigations, and treat any persons who had been bitten by rabid animals and who might apply for such treatment.

The large demand for virus from different parts of the country indicated a widespread distribution of rabies throughout the United States. It, therefore, seemed desirable to determine as far as possible the geographical distribution of the disease as indicated by deaths among human beings and prevalence among animals.

SOME PREVIOUS REFERENCES TO THE PREVALENCE OF RABIES

In 1900 Salmon[3] reported an extensive investigation into the prevalence of the disease. He reported 230 deaths among human beings in seventy-three of the principal cities of the United States during the decade, 1890 to 1899. He also detailed reports of the existence of the disease in man or animals in the twenty-five states as follows:

Massachusetts
New York
Pennsylvania
Illinois
Iowa
Indiana
Missouri (?)
Wisconsin
Montana
Colorado
Nebraska
Minnesota
Ohio
Alabama
Tennessee
Maine
Maryland
North Carolina
Louisiana
Delaware
South Dakota
Kansas
Oklahoma
West Virginia
Wyoming

From the data presented, he concluded that rabies was much more common than had been supposed.

In 1906 Schroeder,[4] in discussing the prevalence of rabies, presumably in animals, quoted the Chicago *Chronicle* of Sept. 22, 1906, to the effect that rabies had existed during that year in the following fourteen states: Massachusetts, Ohio, North Dakota, South Dakota, New York, Michigan, Connecticut, Indiana, New Jersey, Kentucky, Pennsylvania, Delaware, Illinois and Rhode Island. In addition, Schroeder knew of cases in Maryland, Virginia, North Carolina and the District of Columbia.

In 1908 Hart[5] reported especially the prevalence of the disease in the District of Columbia, and stated that since 1903 positive cases had been diagnosed at the pathological division of the Bureau of Animal Industry delirium of belladonna from the ordinary delirium of alcohol. The belladonna delirium is, I think, a less furious and less pugnacious delirium than that of alcohol. The patients are more persistent and more insistent in their ideas, and more incisive in their speech concerning their hallucinations than is the alcoholic. The hallucinations of alcohol are usually those of an occupation delirium; those of belladonna are not. The various hallucinations of alcohol follow each other so quickly that a man is busily occupied in observing them one after another. The belladonna delirium is apt to be confined to one or two ideas in which the patient is very insistent.

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* Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Ravenel, Mazyck P.: Bull. 79, Dept. of Agric., Pennsylvania, 1901.

[2] Peters, A.: Rabies in Massachusetts, Am. Jour. Pub. Hyg., February, 1907, p. 94.

[3] Salmon, D. E.: Year-Book Dept. Agric., 1900.

[4] Schroeder, E. C.: Circ. 120, Bureau of Animal Industry, 1908.

[5] Hart, G. H.: Circ. 129, Bureau of Animal Industry.

If these symptoms of belladonna intoxication occur, of course, the specific must be discontinued, beginning again with the original smaller dose. When an alcoholic is admitted in the midst of his spree, or at the end of it, the first thing to do is to put that patient to sleep, and the only medication which precedes his hypnotic is the four C. C. pills. The hypnotic which has given me the best results is the following:

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If these are not effective within two hours, or even less, and the patient is of the furious, thrashing, motor type, a hypodermic injection of the following will almost invariably quiet him:

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I believe it wise to give most alcoholics 1/60 to 1/30 of a grain of strychnin every four hours. In the young robust alcoholic this may not be necessary, but in the majority of those at the end of a protracted spree it is more often indicated than not. Fourteen hours after the beginning of the specific the patient should again be given a cathartic. One must judge here from the severity of the action of the 4 C. C. pills whether the same dose should be repeated, or whether only 2 C. C. pills with five grains of blue mass should be given. Although I have never seen one of these patients overphysiced, we must treat them as individuals and not fall into the dangerous habit of routine treatment.

At this stage of the treatment the young full-blooded alcoholics may need a further dose of the hypnotic, and one may be able to carry them through the entire treatment without any alcohol; but the older alcoholics and those in a weakened and poor physical condition should have with their milk one or two ounces of whiskey about four times a day. This whiskey and milk is to be given only for the first twenty-four hours. During the second twenty-four hours probably only two doses of whiskey will be required, and after that it should not be given at all.

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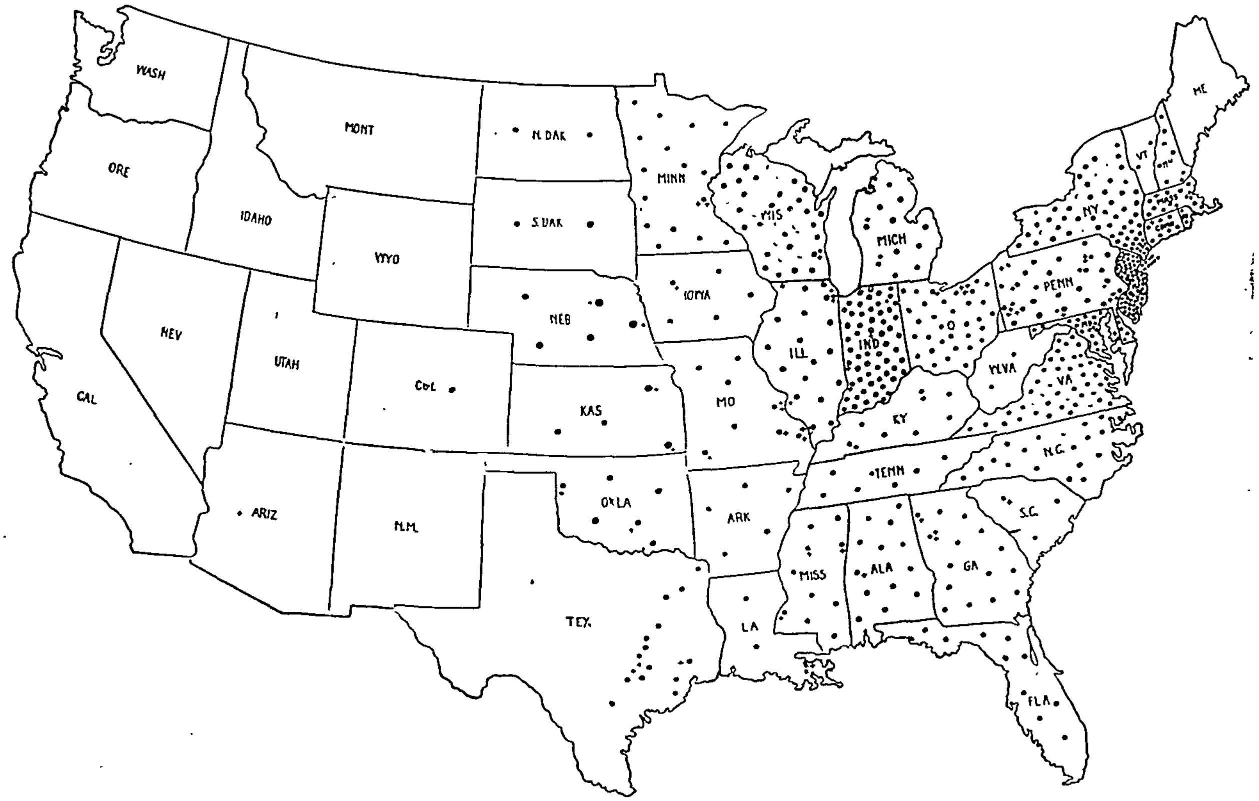
As is well known, morphin is often taken to smother the pain of some underlying disease, or the distress of some disturbance of function. If these causes still exist after the morphin has been eliminated, the evidence of this former disease or this disturbed function will come placed as accurately as possible to show the exact location within the state where the infection occurred. This placing of the crosses was thought preferable for the purpose of this investigation to one in which the place of death would be indicated.

The dots represent 534 localities where rabies in animals was reported to have existed during 1908. They are not placed to represent the exact location of the disease, but indicate rather the number of places in each state where rabies existed. This arrangement was adopted in order to illustrate more strikingly the national prevalence of the disease. It is necessary to state in this connection that the apparent preponderance in certain states must be attributed in part to the receipt of more complete and detailed information from those sections.



Map showing results of inquiry into the prevalence of rabies in the United States during 1908. The crosses represent human deaths, their position showing where infection occurred. The dots indicate towns, etc., where animals were reported infected, the position in state not being shown.

In some states where comparatively meager data are indicated, a large number of rabid animals were reported, but the localities, not being mentioned, were necessarily omitted in order to avoid possible duplication.

The data presented represent foci of infection actually determined and not the number of cases among animals. The number of foci, however, would no doubt be greatly increased if complete reports from the various agricultural and veterinary institutions were at hand.

Practically all of the figures given, however, are compiled from official sources, representing 3,285 replies to inquiries sent out. Press clippings, on the other hand, furnished only a small proportion of the figures, and in no instance did a press report lack official confirmation. This is contrary to the general opinion that the cases reported in newspapers are usually without foundation.

The most striking feature brought out is the very general distribution of the disease throughout the Eastern portion of the country, and its almost complete absence from the extreme Western part, especially the Rocky Mountain and Pacific Coast regions. It must be remembered, however, that these sections, apparently free from rabies during 1908, have not always been exempt, cases having been reported by previous investigators from Montana, Colorado, California and Wyoming. The animals reported as having been affected were dogs, cats, wolves, horses, cattle, sheep, hogs, squirrels, and skunks.

It was among skunks that the disease was reported in Arizona, and the single death among human beings in that state followed the bite of one of these animals.

Dr. William Brumby, Health Officer of Texas, in a discussion of this subject at the Conference of State and Territorial Health Officers with the Public Health and Marine-Hospital Service, referred to the frequency of the disease also among skunks in western Texas and the dangers of the transmission of the disease through the agency of these animals.

Reports received from various sources indicate that a large number of laboratory diagnoses were made of the disease among animals during the year, but it was impossible to include many of these cases in determining the foci of infection for reasons previously mentioned.

FACILITIES FOR TREATMENT OF RABIES IN THE UNITED STATES

The reports thus far secured indicate that nearly 1,500 persons took the Pasteur treatment during 1908 on account of having been bitten by rabid, or supposedly rabid animals. On account of the futility of legal measures for the suppression of the disease, resort to prophylactic treatment to this extent was rendered necessary.

from the following states: Virginia, Maryland, Indian Territory, Indiana, North Carolina, South Carolina, Georgia, West Virginia, New Jersey, Maine, and Wisconsin. He also referred to reports of its prevalence in Pennsylvania, Connecticut, Florida, Mississippi, New York, Illinois, and Minnesota, and stated that there was abundant evidence to warrant the statement that not a single state was free from the disease. Interesting facts on the prevalence of rabies are in the appendix to a report[6] issued in 1900 by the Committee on Public Health of the Medical Society of the District of Columbia. Among the localities mentioned is California.

Many similar references might be made to reports of cases and estimates of its prevalence scattered through the literature. The assembling of such isolated references would be of much interest, but it is doubtful if they would render clearer our knowledge of the general prevalence of the disease.

In 1901 Ravenel[7] stated that there was no systematic report of rabies in the lower animals in any state, so that it was impossible to give any idea of the number of dogs or other animals affected yearly. He expressed the belief, however, that the disease was more prevalent than was generally supposed, and that it would increase unless controlled by means of efficient laws.

Moore[8] has also stated that the prevalence of the disease can not be accurately determined as there are no reliable statistics concerning it.

The same statement in a measure applies also with respect to the prevalence of the disease among human beings.

MORTALITY STATISTICS OF RABIES

On account of the almost uniform fatality of rabies among human beings, complete mortality statistics, if available, would give a fairly accurate idea of the geographical distribution of the disease. Unfortunately such statistics for the entire country are not available.

The Bureau of the Census has collected statistics[9] of *rabies in the registration area, the deaths by years from* 1900 to 1907 being given in Table 1.

TABLE 1.—DEATHS FROM RABIES IN THE REGISTRATION AREA OF THE UNITED STATES, 1900 TO 1907

1900	1901	1902	1903	1904	1905	1906	1907
33	41	45	43	38	44	85	75

The registration area comprised fifteen states, the District of Columbia, and seventy-eight cities, and contained an estimated (1906) population of 40,996,317. The total estimated population of the country during that year was 83,941,510.

The census statistics indicate that in 1906 and 1907 there were almost twice as many deaths from rabies as had occurred in any previous year since 1900. These deaths were distributed as shown in Table 2.

TABLE 2.—DEATHS FROM RABIES IN THE REGISTRATION AREA OF THE UNITED STATES, 1906 AND 1907

	1906		1907	
In Registration Area.	Cities.	Rural.	Cities.	Rural.
Connecticut	5	1	2	1
District of Columbia	0	0	1	0
Indiana	1	4	1	2
Maryland	2	0	0	0
Massachusetts	5	3	3	0
Michigan	2	2	1	2
New Hampshire	0	0	1	0
New Jersey	5	4	1	3
New York	15	1	27	3
Pennsylvania	10	4	2	10
Rhode Island	2	0	0	0
Cities in other states	19		15	
	66	19	54	21

PRESENT INQUIRY INTO THE PREVALENCE OF RABIES

When prophylactic treatment of rabies was begun by the service in April, 1908, preparations were also made to secure information regarding the occurrence of the disease throughout the country. Every effort was made to secure information regarding cases reported, and a letter was addressed by the Surgeon-General to health officers in every state and requesting their cooperation in the collection of data.

It was not expected that the facts elicited would by any means represent the exact prevalence of the disease, but rather its geographical distribution. This latter information is of importance from a public health standpoint as indicating where preventive measures are most needed and where prophylactic treatment should be made available.

For information regarding the disease, recourse has been had to state and territorial health authorities, including the District of Columbia; county and municipal authorities; the Bureau of the Census; Pasteur institutes, and press reports. Valuable assistance has been received through these agencies.

On account of the large number who furnished data, it is impossible to make personal mention, but acknowledgments are due and here made to all who contributed information, and whose cooperation rendered possible the collection of facts presented.

By making as careful inquiry as possible covering a certain limited period, it was thought that more definite information would be secured regarding the incidence of the disease. The facts collected and presented, therefore, relate only to the calendar year 1908.

Every effort has been made to include only authentic cases among human beings, and it is safe to say that no duplication of cases has occurred.

The same care has also been observed with respect to outbreaks among animals.

Table 3 contains the number of deaths reported among human beings in each state, and the number of localities in each state from which rabid animals were reported.

TABLE 3.—RABIES IN THE UNITED STATES DURING 1908

State.	No. deaths in man.	No. localities in which rabid animals were reported.	State.	No. deaths in man.	No localities in which rabid animals were reported.
Alabama	1	13	Nevada	0	0
Arizona	1	1	New Hampshire	2	7
Arkansas	1	5	New Jersey	11	41
California	0	0	New York	19	52
Colorado	0	1	New Mexico	0	0
Connecticut	1	7	North Carolina	0	19
Delaware	0	5	North Dakota	0	2
District of Columbia	0	1	Ohio	4	32
Florida	0	11	Oklahoma	3	6
Georgia	3	17	Oregon	0	0
Idaho	0	0	Pennsylvania	14	25
Illinois	2	18	Rhode Island	1	10
Indiana	5	57	South Carolina	1	5
Iowa	1	5	South Dakota	0	2
Kansas	2	4	Tennessee	1	7
Kentucky	1	7	Texas	3	15
Louisiana	4	3	Utah	0	0
Maine	0	0	Vermont	0	1
Maryland	6	12	Virginia	1	37
Massachusetts	5	9	Washington	0	0
Michigan	3	11	West Virginia	0	2
Minnesota	2	18	Wisconsin	3	42
Mississippi	1	10	Wyoming	0	0
Missouri	8	9			
Montana	0	0		111	534
Nebraska	1	5			

The accompanying map shows the reported deaths from rabies among human beings and outbreaks of the disease among animals.

There are 111 crosses, representing deaths, scattered over thirty states and territories. These crosses are placed as accurately as possible to show the exact location within the state where the infection occurred. This placing of the crosses was thought preferable for the purpose of this investigation to one in which the place of death would be indicated.

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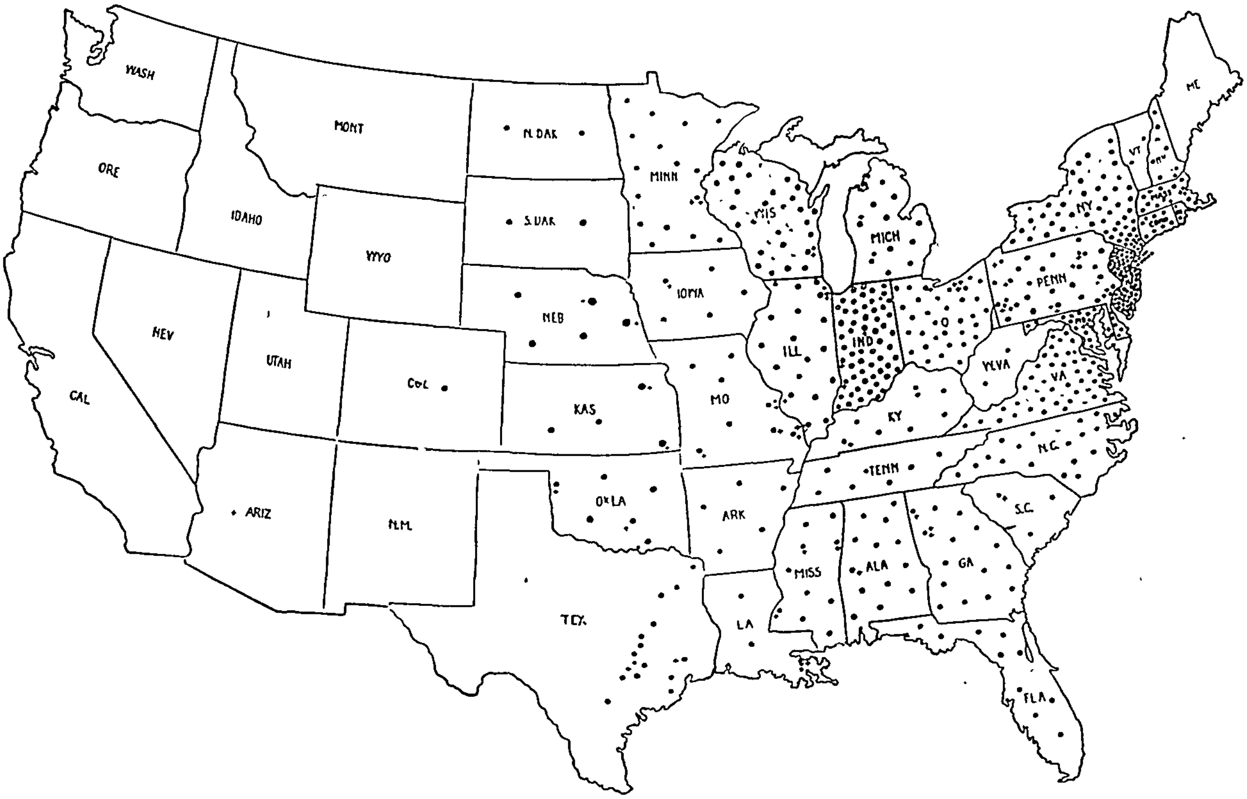
[6] Bull. 25, Bureau of Animal Industry, 1900.

Ravenel, Mazyck P.: Bull. 79, Dept. of Agric., Pennsylvania, 1901.

[8] Moore, Veranus A.: The Pathology of Infectious Diseases of Animals, p. 406.

[9] Mortality Statistics, Bureau of the Census, 1904, 1906-1907.

The dots represent 534 localities where rabies in animals was reported to have existed during 1908. They are not placed to represent the exact location of the disease, but indicate rather the number of places in each state where rabies existed. This arrangement was adopted in order to illustrate more strikingly the national prevalence of the disease. It is necessary to state in this connection that the apparent preponderance in certain states must be attributed in part to the receipt of more complete and detailed information from those sections.



Map showing results of inquiry into the prevalence of rabies in the United States during 1908. The crosses represent human deaths, their position showing where infection occurred. The dots indicate towns, etc., where animals were reported infected, the position in state not being shown.

In some states where comparatively meager data are indicated, a large number of rabid animals were reported, but the localities, not being mentioned, were necessarily omitted in order to avoid possible duplication.

The data presented represent foci of infection actually determined and not the number of cases among animals. The number of foci, however, would no doubt be greatly increased if complete reports from the various agricultural and veterinary institutions were at hand.

Practically all of the figures given, however, are compiled from official sources, representing 3,285 replies to inquiries sent out. Press clippings, on the other hand, furnished only a small proportion of the figures, and in no instance did a press report lack official confirmation. This is contrary to the general opinion that the cases reported in newspapers are usually without foundation.

The most striking feature brought out is the very general distribution of the disease throughout the Eastern portion of the country, and its almost complete absence from the extreme Western part, especially the Rocky Mountain and Pacific Coast regions. It must be remembered, however, that these sections, apparently free from rabies during 1908, have not always been exempt, cases having been reported by previous investigators from Montana, Colorado, California and Wyoming. The animals reported as having been affected were dogs, cats, wolves, horses, cattle, sheep, hogs, squirrels, and skunks.

It was among skunks that the disease was reported in Arizona, and the single death among human beings in that state followed the bite of one of these animals.

Dr. William Brumby, Health Officer of Texas, in a discussion of this subject at the Conference of State and Territorial Health Officers with the Public Health and Marine-Hospital Service, referred to the frequency of the disease also among skunks in western Texas and the dangers of the transmission of the disease through the agency of these animals.

Reports received from various sources indicate that a large number of laboratory diagnoses were made of the disease among animals during the year, but it was impossible to include many of these cases in determining the foci of infection for reasons previously mentioned.

FACILITIES FOR TREATMENT OF RABIES IN THE UNITED STATES

The reports thus far secured indicate that nearly 1,500 persons took the Pasteur treatment during 1908 on account of having been bitten by rabid, or supposedly rabid animals. On account of the futility of legal measures for the suppression of the disease, resort to prophylactic treatment to this extent was rendered necessary.

Pasteur treatment was no doubt a potent factor in the prevention of human deaths from this disease, but it must be regarded as a temporary and costly expedient to be maintained to save lives only until such time as more effective measures of attacking the disease at its root are being perfected and put in operation.

On inquiry, it has been ascertained that the Pasteur treatment is being given at present at the following institutions:

PASTEUR INSTITUTES, OR THEIR EQUIVALENTS, IN THE UNITED STATES

Montgomery, Ala.	Under State Board of Health.
Newark, Del.	Under State Board of Health.
Washington, D. C.	Hygienic Laboratory, Public Health and Marine-Hospital Service.
Jacksonville, Fla.	Under State Board of Health.
Atlanta, Ga.	Two institutions, one of them under the State Board of Health.
Chicago, Ill.	
Indianapolis, Ind.	Two institutions.
Iowa City, Iowa.	Under State Board of Health.
New Orleans, La.	
Baltimore, Md.	
Ann Arbor, Mich.	Under Board of Regents, State University.
Minneapolis, Minn.	Under State Board of Health.
St. Louis, Mo.	
New York City.	Two institutions, one of them under the municipal government.
Raleigh, N. C.	State Laboratory of Hygiene.
Pittsburg, Pa.	
Marietta, Pa.	
South Carolina.	One to be opened in July, 1909, under State Board of Health.
Austin, Tex.	Under State Board of Health.
Richmond, Va.	

There are thus over twenty institutions located in nineteeen states prepared to give Pasteur treatment, twelve of them being under official auspices.

VIRUS FURNISHED BY THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE

Since April, 1908, the U. S. Public Health and Marine-Hospital Service has been treating, free of charge, exposed persons who applied at the Hygienic Laboratory, Washington, D. C. At the close of the calendar year, ninety-nine persons had availed themselves of the privilege. In addition, virus has been furnished to state health authorities on their request and for administration under their direction.

The treatment of persons at a distance from the laboratory by means of virus, forwarded when necessary under the system maintained, has proved entirely satisfactory. By this means a supply of virus is made available at all times, and especially to persons unable to secure it themselves because of financial limitations.

The treatments are shipped by mail in response to telegraphic request, and on arrival are both pure and potent. Slight delay in delivery has seemed to cause no appreciable decrease in potency, a considerable number of treatments having been sent to the Isthmian Canal Zone and used there with complete success.

The Pasteur treatment is undoubtedly a powerful factor in preventing mortality, but the necessity for it will be obviated when measures for the suppression of the disease among animals become effective.

That the extinction of rabies is a possibility is a matter of historical knowledge, as evidenced by the brilliant results of effective legislation in England and other countries.

The prevalence of rabies to the extent shown by this inquiry is evidence that further measures of suppression are necessary. It is pertinent in this connection to refer briefly to the measures authorized in certain states concerning which information is at hand.

In Connecticut a state law requires the registration and tagging of dogs and the destruction of dogs not registered and tagged. Local health officers are required to report the occurrence of rabies to the Commissioner on Domestic Animals, who may make regulations to check the spread of the disease, such regulations to be published and obeyed under penalty of fine. A state law also provides for Pasteur treatment when necessary at state expense. On the oath of a physician that the treatment is necessary it is furnished at the expense of the town, the town being reimbursed from the state dog license moneys.

In Delaware, patients are treated by the State Board of Health at cost.

In the District of Columbia, the District Commissioners are required to issue a muzzling ordinance on the occurrence of rabies. Exposed persons are treated at the Hygienic Laboratory, Public Health and Marine-Hospital Service, on application, and treatments are mailed free, on application by state health authorities.

In Florida, the duty is placed by law on the State Board of Health to prevent the importation and spread of rabies. The Pasteur treatment is administered under the general statutes by the State Board of Health at the patient's home.

In Indiana, the state veterinarian is authorized to order the muzzling of dogs on the appearance of rabies.

In Maine, the state law empowers the State Board of Health to make regulations preventing the introduction and spread of rabies.

In Massachusetts, the powers to take measures are delegated to the Cattle Bureau, except in the City of Boston, where the Board of Health has this authority. A resolution recently approved in the legislature provides that the State Board of Health shall cause suitable provision to be made for the treatment of rabies in man by appropriate remedies, and shall report as to the expense and advisability of preparing these remedies under the direction of the State Board of Health.

In Michigan, the prevention of rabies is provided for in the law relating to diseases in cattle, and indigent persons are treated at the expense of the township, city or village.

In Minnesota, by a regulation of the Sanitary Live Stock Board, a muzzling order may be issued by local boards of health where rabies exists. A state law provides for the free treatment of residents of the state, a special appropriation having been made for that purpose.

In New Hampshire, a law permits the local authorities to cause all dogs to be muzzled for such period as may be determined.

In New Jersey, laws provide for the issuance of a muzzling ordinance by the mayors of incorporated towns and the destruction of unmuzzled dogs; also for the notification to the State Board of Health of contagious or infectious diseases among animals, the investigation of reports by the board, and the taking of such precautionary measures as may be deemed necessary.

In New York, the restriction of the disease is placed under the control of the State Commissioner of Agriculture. A law provides that patients may be sent to New York for treatment at county expense.

In Rhode Island there is no state law controlling rabies. When the disease exists the local councils require the muzzling of dogs for a certain period.

In South Carolina, a law provides that the health officers shall, in case rabies exists, place restrictions to prevent its spread.

In Vermont, the public statutes empower the State Board of Health to make regulations to muzzle dogs when rabies is found, and to kill unmuzzled animals.

These serve to illustrate briefly the measures in use. A considerable number of states seem to have no provision for the institution of measures against rabies, while from others no data have as yet been received.

Notwithstanding the beneficent intent of these state laws and the good results to be expected of them, it is a matter of common observation that their enforcement is too often, through neglect or inability to overcome the obstacles which always appear, more of a failure than an effectual application of suppressive measures.

SUMMARY

To summarize briefly the results of this inquiry, there were 111 deaths in human beings from hydrophobia reported from 30 states during the year 1908. Rabies was reported in the lower animals from at least 534 localities in 39 states and territories, including the District of Columbia. Evidence has also been secured of nearly 1,500 persons who, on account of exposure to rabies, or presumably rabid animals, were obliged to take the Pasteur treatment.

The disease is disseminated throughout the Eastern three-fourths of the country, and seems to have been unknown during the past year only in the Rocky Mountain and Pacific slope regions.

The suppression of rabies in man merely affords another instance of the necessity of eliminating a like disease from among animals.

This means the destruction of infected animals and the proper muzzling of all dogs in infected areas.

ABSTRACT OF DISCUSSION

Dr. H. M. Bracken, St. Paul: I hope that Dr. Kerr will revise the map before it is published. It is not quite fair to Indiana that it should appear to be so much worse than all other states, some of which undoubtedly have as much rabies. Probably Minnesota would be as badly spotted as Indiana is if all the cases of rabies had been reported. In Minnesota the reporting is under two departments, the Live Stock Sanitary Board and the State Board of Health. This map illustrates what I have always maintained, viz., that it is a mistake to have two sanitary boards, one for animals and the other for humans. Under the present Minnesota law the State Board of Health has no interest in a rabid dog until it bites a human being. There is a Pasteur Institute in Minnesota, where during the past year over 200 human beings were given prophylactic treatment. All had been bitten by a rabid (or supposedly rabid) animal. In a few instances we were not able to get the head of the biting animal, and therefore could not prove rabies, but a large percentage of the individuals were shown by the findings to have been bitten by rabid animals. I think the Minnesota State Live Stock Sanitary Board would be glad to furnish Dr. Kerr with the number of cases of rabies on its records, and I know that Dr. F. F. Wesbrook, director of the laboratories (and Pasteur Institute) will be glad to give data for the State Board of Health. I am glad to know that the material for prophylactic treatment put out by the United States Public Health and Marine-Hospital Service is to be sent only through boards of health. I do not think it is safe to put the prophylactic treatment for rabies in the hands of every physician in the country. Health officers know who the competent physicians are, and if a dog has bitten a person and prophylactic treatment is to be given, the health official is the proper one to determine who shall give the treatment. In Minnesota, when prophylactic treatment is necessary, this is given at the Pasteur Institute free of charge to residents of the state.

It may be interesting to know that in Minnesota the attorney general has given a ruling that the control of rabies comes under the same law as other communicable diseases, and, therefore, the expense connected therewith falls first on the municipality (city, village or township, as the case may be). The bitten person, if poor, does not have to stop and ask where the money to pay for traveling expenses, board, etc., is to come from. The local board of health sends the individual to the Pasteur Institute at once and the question of who shall pay the bills finally is determined.

Dr. W. M. Brumby, Austin, Texas: I notice that very few cases have been reported from Texas, which I regret. So long as we have had so many cases, it is unfortunate that Dr. Kerr did not have the opportunity of making a better report possible from our state. The Pasteur Institute, however, is not under the state health department, but under the superintendent of one of the insane asylums. As many as 1,350 cases of hydrophobia have been treated at that institution in a little less than the last five years, with 6 deaths. The patients who died were invariably bitten fearfully, lacerated or macerated, many bitten as frequently as from 25 to 50 times, if I am not mistaken; 5 or 6 were children. At our institution the officials prepare their own specimens, and have been very fortunate in their work; very few instances of any septic trouble resulting are known. There is a uniform charge of $25 in each case—each patient treated; unless, of course, the patient is in needy circumstances, when no charge is made.

In 75 per cent. of the cases the individuals were bitten by skunks. There is more hydrophobia in west Texas, Arizona and New Mexico, apparently, in proportion to population, than east of that point. It is asserted that a certain skunk is very susceptible to this disease and it is known as a "hydrophobia cat." These animals have rabies and die with it. About 2 or 3 per cent., possibly, of the patients bitten, were bitten by wolves. Our institution at present has 27 or 28 rabies patients in it, and has had constantly, for the last twelve months, from 22 to 32 cases at a time. I forgot to get the exact number of cases treated last year; but I am pretty sure that there were about 400 such patients treated in the last 12 months in Texas, 80 per cent. of which were from the state of Texas. Others came from Mexico, New Mexico, Arizona and Louisiana.

Dr. John F. Anderson, U. S. Public Health and Marine-Hospital Service: It has been decided that in the lack of any special arrangements it was not wise to send out the emulsion ready for use; although that is done by some of the commercial firms, who send it out in a modified thermos apparatus. We sent out our cords, each treatment being in a separate glass vial. This is sent out to the state health laboratory, with full directions showing how the emulsion should be prepared, and stating the scheme of treatment—either mild or intensive. We have adopted the Berlin scheme; that is, the most attenuated cord we use is the one dried 8 days; whereas, in the Pasteur method, the 14-day cord was used in the beginning. In the Pasteur method, the 2-day cord is only reached at the end of 7 days; we reach it in 4 days; and in the intensive treatment the 1-day cord, which is given only once, is reached on the fifth or sixth day. It is interesting that Ferran in Barcelona has reported some good statistics in which he uses the fresh cord from the rabbit; so, after all, we may be losing a good deal of time in drying our cord and not taking it immediately from the rabbit.

Dr. W. Forrest Dutton, Walker's Mills, Pa.: Within the last few months there have been 25 or 30 cases of rabies in western Pennsylvania. I do not know what is ascribed as the cause; the disease seems to me to be increasing at a rapid rate. There is an efficient Pasteur institute in Pittsburg, but it does not seem to affect the increase in the rate at all. I do not know whether it is the fault of the authorities or some unseen thing that we have to deal with.

Dr. M. F. Gates, U. S. Navy: Have any experiments been undertaken at the Hygienic Laboratory or elsewhere, with a view of determining whether or not there is any persistent infection in animals or men apparently cured or recovered from rabies, and to ascertain whether it is possible to redevelop a virulent virus from these cases? It seems to me that, in view of the tendency toward the injection of sera containing living organisms, this is an important point.

Dr. John W. Kerr, Washington, D. C.: I shall be glad to revise the map to date if anybody will be kind enough to furnish additional information of definite location where rabies was found in 1908. To secure the data presented, over 7,000 inquiries were sent out, and in some instances we have received duplicate reports. In order to avoid misrepresenting a particular state or locality, therefore, we have had to exercise great care, and probably have had a few more reports of infected localities than are shown on our map.

Rabies is a striking disease because of the method of its transmission and uniform fatality. On this account, and on account of the relatively few cases that occur, one would suppose it to be, and it probably is, the easiest disease concerning which to get accurate information. I assure you, however, that a collection of definite data of this disease has been extremely difficult to secure, and this only represents the great difficulty of collecting morbidity and mortality statistics for the entire United States.

Dr. Stimson, my associate in this work, has had entire charge of preparing the virus, and he has made a special study of it, whereas my part of the work has been in connection with the collection of the statistics.

Dr. J. N. Hurty, Indianapolis: Indiana is very well spotted on the map. The reports come in very promptly since we had a symposium on the subject of hydrophobia in our health officers' school, which is held whenever the state board commands. We tried to get a law that would prevent hydrophobia. The idea was to place a heavy tax so as to get rid of all miserable curs, and then only the well-bred, well-cared-for animals would be kept. The bill failed to pass. At Bloomington, Ind., where the state university is located, and where there are from 2,000 to 3,000 students, it was found that in each fraternity house there were from 2 to 4 bulldogs. In one "frat" house a bulldog went mad and infected 21 boys. They all took the Pasteur treatment, and none of them had the disease. With all this horrible experience, the people can not be brought to the point of handling the dogs so as to prevent hydrophobia. I do not know that we can attribute it to stupidity. The people there are students of science and the college has a highly cultured faculty; and yet they will not take steps toward controlling the dogs, the source of the hydrophobia. When we consider educating people in preventive medicine, this experience is rather discouraging. Our statistics show that 3 per cent. of the cases of hydrophobia reported proceeded from cats. Cats and dogs only. We have no record of any other animals imparting hydrophobia.

One of the deaths at Indianapolis occurred eleven months after incubation. A woman's pet dog bit her; the dog afterward died of some disease not known—it may have been hydrophobia; and then the woman developed hydrophobia and died. The physicians who attended (I did not see the case) are confident that it was hydrophobia.

Dr. M. Frederick, Cleveland: We had an epidemic of rabies in Cleveland, so much so that at the present time every dog that bites is placed under the care of a veterinary surgeon at the owner's cost. The city treats every person bitten by a rabid dog free of charge. They are not guarded in an institution. They are allowed to go about their business. Any intelligent physician can administer the treatment. There is no need of sending these people hundreds of miles over the country. A physician who can inject antidiphtheritic serum can also inject antirabic serum.

Dr. W. Litterer, Nashville, Tenn.: Prior to 1900, rabies was a very rare disease in Tennessee. Since that time it has been progressively increasing, until now there are reported more than 100 cases occurring every year in dogs alone. I am sure I could put on the chart 100 dots as well as 3 crosses. One case occurred in Nashville; the patient died recently from typical rabies. I made an autopsy and found the Negri bodies in the cerebellum, in the hippocampus major and in other parts of the brain. A portion of the brain was emulsified and subdural injections made in 3 rabbits and 3 guinea-pigs; they all died from rabies in from 15 to 21 days. The pigs died sooner than the rabbits. When one studies this disease carefully, I am at a loss to know how anyone can doubt its existence. I want to call attention to the prevailing idea, especially among negroes and uneducated whites in my section of the country, concerning the therapeutic value of the madstone when one has been bitten by a rabid animal. The madstone is said to be an enterolith from the deer and is applied to the wound. Owing to its porosity it will stick and when put into milk it is said to turn the milk green. This performance is impressive to many of the lower classes and a number resort to this mode of treatment. I wish to say that such a practice is pernicious. In the first place, it creates in the mind a false security, and secondly, I have in mind a case in which the madstone actually produced the disease. It occurred after the following manner: A man was bitten on the hand by a rabid dog and a madstone applied; several hours later a vicious bulldog (not rabid) bit a 5-year-old child severely on the cheek. The same madstone was applied to the cheek of the child. In twenty-two days the child died from typical hydrophobia. No autopsy was allowed. The bulldog is living to-day, showing that the disease could not have been transmitted by it, but that the only means of transmission was by carrying the virus from one person to another by means of this madstone. As I said before, such a practice is pernicious and should be controlled by legislation.

Dr. A. C. Abbott, Philadelphia: From a limited experience with this disease in Philadelphia, I am convinced that the suggestions of Dr. Friedrich of Cleveland are both important and practical. The value of the treatment is no longer under debate. The time at which the treatment should be given is of immense importance. To waste time in discussing how the means are to be raised for a patient bitten by a rabid animal to go to a Pasteur institute, is, in my opinion, not justifiable. I do not think we should pause to determine who is to pay for this treatment. If the community wants to get rid of the disease and save the patient, it can fairly have the cost of this treatment charged up against it.

The plan that we have followed in Philadelphia in a small number of cases—some of which were certainly hydrophobic, some of which were doubtful in my mind, but which I considered of sufficient gravity to give the patient the benefit of the doubt—has been this: We have secured, at the expense of the health department of the city, materials from reliable laboratories (usually from the New York laboratory), and have detailed one of the physicians of the health department to administer the treatment. We have not had a single death in a number of cases, how many I can not state precisely, but probably twelve would cover them all. They were among people who could not have raised the means to go to New York and remain there long enough to get the treatment; and had they not received the treatment in the way given by us, they would not have received it at all; and I am convinced that there would have been some fatalities. As it was, there was no fatality. We pay $25 for material enough to treat a single case. I do not know the terms under which the emulsion can be secured from the government laboratory.

Dr. H. M. Bracken: It is free.

Dr. A. C. Abbott: I feel, therefore, that it is advisable for those in authority to keep a small supply of this material on hand for emergencies. There is no difficulty whatever about the injection; and so far as the results of the injection are concerned, as Dr. Friedrich says of the Cleveland experience, we had no more bad results than one would get from the injection of antitoxin for diphtheria.

Dr. Juan Guiteras, Havana, Cuba: This disease also extends to Cuba. We had been several years without any cases of rabies until last year, when there was a remarkable increase; and there was just as remarkable a falling off after the law in regard to street dogs was put in force. The disease is now rapidly dying out. We have a Pasteur institute there; and the patients receive the treatment with great success.

Clean Milk.—Preventive measures are better than corrective ones. Pasteurization can not atone for filth. Milk should be produced under clean conditions and kept clean, and it would not then have to be purified. But we must guard against enemies so long as they exist. We would all like to do away with the necessity for armies and navies, but present conditions demand their maintenance. The same is true of harmful bacteria in milk; so long as the average market milk is apt to contain these insidious foes, the only protection we have is to destroy them with heat.—M. J. Rosenau, in *Annals of Medical Practice*.

A NEW TYPE OF PHTHISIOPHOBIA *

S. ADOLPHUS KNOPF, M.D.

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NEW YORK

In these twenty years of work in tuberculosis and with the tuberculous, I have come across a good many types of phthisiophobia. There is, first, the general phthisiophobia, that is to say, the exaggerated fear on the part of the layman of the presence of the consumptive. All physicians who have had anything to do with tuberculosis have seen this type of phthisiophobia. Then there is a phthisiophobia of communities which object to the establishment of sanatoria, tuberculosis dispensaries, day-camps, or even open-air schools. Nearly all our state commissions which have been entrusted with the establishment of sanatoria, have encountered this phthisiophobia, which has its origin in the fear that a sanitary or financial danger may arise to the neighborhood wherein such an institution should be established. In my books and articles[1] I have protested against this type of phthisiophobia more than once and have been able to demonstrate conclusively by statistics that the mortality from tuberculosis among the inhabitants in or near communities where sanatoria have been established has always decreased after the opening of the institution, and continued to decrease.[2] Furthermore, the financial prosperity of the community has been improved as compared with what it was before the establishment of the sanatoria in such localities.

Heretofore, phthisiophobia usually originated in the minds of laymen, although some years ago a young physician,[3] first quoting a number of other authors and then stating his own experience, denounced the average consumptive as having mental peculiarities which manifest themselves in psychasthenia, the loss of self-control, the rise of brute selfishness, all combining to distort the clearness of ethical perception. It was not very difficult to reply to this unjust, totally unwarranted, and unscientific accusation.[4] The best men in our profession came to my assistance. Such men as Osler, Biggs, Janeway, Trudeau, Otis, Tyson, and others gave the benefit of their experience, all showing conclusively that the average consumptive, far from being below the usual moral standard, more often has a higher ethical and humane conception of his duties toward his fellowmen.

Therefore, it was with a genuine feeling of sadness that I read in the *Survey* (New York) of May 22 and in various Oklahoma newspapers that the State Board of Medical Examiners of Oklahoma recently decided to refuse granting licenses to practice medicine to all physicians afflicted with tuberculosis. To justify their position it was held by the board that the interests of the patients demanded this action.

I confess that in all my experience with phthisiophobics I have never heard of such an inhuman, cruel decision. How often has it not been proved that the clean, conscientious, and trained consumptive is not a danger to his fellowmen, but is as safe to associate with as anybody else! Who in the world, in the name of justice and fair play, can be better trained, more careful, or conscientious than the physician who is afflicted with tuberculosis? I have had as internes in one of the great German sanatoria, and in later years as private patients, a goodly number of consumptive physicians, and, while I am willing to concede that they were by no means model patients when it came to resting when they ought to have rested, not once can I recall an instance when they were not scrupulously clean and careful with their expectoration, and in their general behavior the last persons who could propagate the disease.

Last, but not least, what would be our medical science of to-day, where our modern therapy of tuberculosis without the tuberculous physicians—a Laennec, a Brehmer, a Dettweiler, a Grancher, a Solly, a Trudeau, or the hundred others who, because they were tuberculous, devoted or are devoting their lives to saving others from falling victims to the same disease? Laennec taught us to auscultate the tuberculous chest; Brehmer founded the first sanatorium for the tuberculous in Germany and proved more than anybody else the curability of tuberculosis when he defended his celebrated thesis, *Tuberculosis primis in stadiis semper curabilis* (tuberculosis is always curable in its first stages). His most illustrious pupil, Geheimrath Dettweiler, my own immortal teacher, who elaborated on Brehmer's system by adding the rest cure, realizing the need of the greatest precautionary measures in sanatoria, invented the first pocket flask as a receptacle for tuberculous sputum. Anxious to let the masses also be benefited by the invaluable sanatorium treatment, he became the founder of the first sanatorium for the consumptive poor in Germany. And Grancher, one of my French masters, how much are we not indebted to him for proving the pathologic unity of tuberculosis long before Koch's discovery of the bacillus! How much do we not owe him for his clinical description of incipient tuberculosis, and what a beautiful example of brotherly love did he not exemplify when, though childless himself, he created and endowed the work of preserving children against tuberculosis (*œuvre de la preservation des enfants tuberculeux*).

Solly, a consumptive English physician, sought and found in hospitable Colorado and among the fraternal members of the medical profession of Colorado Springs a welcome and a home. He became an American and added glory to the American medical profession by his antituberculosis labors and climatologic studies. His book on climatology is one of the classic productions of the day on this subject.

I name our own Trudeau last, not that he is the least, but perhaps the greatest of them all, for if there ever was a tuberculous physician who typified all that is best in man and in our profession surely he is the one. Twenty-five years ago he arrived, a tuberculous invalid, in the Adirondack wilderness. He was not content to cure himself, but immediately set about to help others, and by hard work and study and with a heart for suffering humanity he has become one of the greatest authorities in the therapy of tuberculosis and the pioneer in the sanatorium treatment in the United States. Thanks to his indefatigable labors there exists to-day at Trudeau, the place named after its founder, one of the most flourishing and beautiful sanatoria, comprising over twenty cottages, infirmary, administration building, church, library, laboratory, etc.

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*Read in the Section on Preventive Medicine and Public Health of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Tuberculosis, Its Modern Prophylaxis and the Treatment in Special Institutions and at Home, P. Blakiston's Son & Co., Philadelphia; Tuberculosis, in Twentieth Century Practice of Medicine, xx and xxi, Wm. Wood & Co., New York; Tuberculosis as a Disease of the Masses and How to Combat It, The Survey, New York; Public Measures in the Prevention of Tuberculosis, in American Treatise on Tuberculosis, D. Appleton & Co., New York; Tuberculosis a Preventable and Curable Disease, Moffat Yard & Co., New York.

[2] The Sanatorium for Tuberculous Patients, Its Medical and Social Mission, New York Med. Jour., Oct. 21, 1905.

[3] Saxe, G. A. De Santos: Psychical Relation of Tuberculosis in Facts and Fiction, New York Med. Jour., Aug. 1 and 8, 1903.

[4] A Plea for Justice to the Consumptive, Med. Rec., New York, Jan. 2, 1904.

I have named only six of our great therapeutists and antituberculosis workers who, though themselves tuberculous, saved, by their devotion to the cause, by their labor for science and love for humanity, thousands and thousands of consumptive sufferers who without their skill would have been doomed. But what would the places be where these men chose to reside had they not been made famous by the cures wrought by these tuberculous men of science? It was Brehmer who gave the reputation to Goerbersdorf and made of the sleepy village a prosperous town. Dettweiler did the same for Falkenstein. Solly added to the reputation of Colorado Springs, and Grancher to that of Pau, in the Pyrenees, while Saranac Lake, now one of our greatest American health resorts, certainly owes its prosperity to Trudeau.

But what we are most concerned with is not the economic but the purely humane and scientific consideration of Oklahoma's attitude toward tuberculous physicians. Scientifically, the decision of the Oklahoma State Board of Medical Examiners can not stand the test. Tuberculosis is the most prevalent of all diseases, and it has been demonstrated at the autopsy table that almost all of us either have or have had a little tuberculosis at some time or other in our lives. Physicians are not exempt from the disease, and many a one would have to lay down arms and retire should this cruel law of Oklahoma become universal.

And now one more word as to the humane consideration. The majority of tuberculous physicians were well and strong when they entered the profession of the healing art. When they contracted tuberculosis they contracted it in the performance of their duty. In my own life I can count, indeed, altogether too many whom I know became consumptive from overwork and exposure to infection. They had taken tuberculosis from others, but I know they have never given it. They have saved many lives and effaced centers of infection, but never became themselves a source of infection. To reward these men by excluding them from practice, by excluding them from any locality where they may recuperate, do good to others and support their own families, is the most cruel and most inhumane action conceivable by one physician toward another.

The medical profession of the State of Oklahoma can not afford to have the distinction of having created a new kind of phthisiophobia which is cruel, unkind, unjust, and certainly not fraternal. The authorities of that great state can not afford to have the unique stigma of inhumanity and selfishness, not to say lack of wisdom, attached to the fair name of Oklahoma. If the medical board of that state should maintain its attitude, I would consider it a reflection on the medical profession of the whole United States. And it is in the hope that the Oklahoma State Board of Medical Examiners may be induced to reconsider this decision by learning the sentiment of the American medical profession at large on the subject that I ask this Section to adopt resolutions,* for recommendation to the House of Delegates.

16 West Ninety-fifth Street.

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*Editor's Note: Dr. Knopf's resolutions set forth that the clean, conscientious, and trained consumptive is not a menace to his fellowmen, and that the scientific knowledge of tuberculosis has been vastly increased by physicians of the past and present who have been afflicted with tuberculosis; and expressed the regret of the Section at the action of the Oklahoma board and the wish that the restriction [illegible]. The resolutions were referred by the Section to [illegible], which body referred them to the Reference [illegible] and Sanitary Science, but no report was returned from that committee, so no action was taken by the House.

A SIDE-LIGHT ON THE ORIGIN OF TABES

DRAWN FROM A COMPARISON OF TABES WITH DIFFUSE SPINAL DEGENERATION AS SEEN IN CERTAIN ANEMIAS AND KINDRED DISORDERS OF NUTRITION *

JAMES JACKSON PUTNAM, M.D.
BOSTON

The opinion that syphilis is the usual cause of tabes is now almost universally accepted. Yet there still remains a certain percentage of cases for which the proof of this etiology is lacking, and students of the subject still seek for other influences, which may claim to share with syphilis the right to be considered as real causes or to represent agencies without the concurrent action of which the disease would not have occurred. The most prominent of these rivals of syphilis to the claim of being real or virtual causes of tabes is fatigue, in Edinger's sense; that is, not necessarily fatigue which is felt, but physiologic overstrain of special portions of the nervous system, carried to the point of seriously damaging the power of nutritive repair of the parts concerned.

I have myself seen, as we all have, cases in which, under the influence of severe exertion, tabetic incoordination has come on in an acute form. But I have seen exactly the same thing happen from severe and general nervous shock, unattended by physical exertion or by any obvious local strain, and, on the other hand, my personal observation has not led me to the view that local overstrain should count either as an exclusive cause of the tabetic degeneration or as capable of determining to any great extent the direction in which it will develop. I admit that these two opinions do not stand on precisely the same footing. The argument for the view that fatigue and local overstrain can not be adjudged sole causes of tabes is much stronger than the argument that they can not be regarded as capable of determining the direction of development of the degeneration. Still, the evidence is far from being overwhelming that one form of tabes is characteristic of brain-workers, another form, of muscle-laborers. We know as yet so little of the developmental influences or the influences related to local nutrition which so obviously help to make the optical apparatus more sensitive in one case, the sensory apparatus concerned in locomotion more sensitive in another case, that the argument for fatigue should not be accorded too much weight.

The failure of syphilis to cause multiple neuritis, in view of the facts that so many toxic agents do cause it and that syphilis exerts such widespread damage elsewhere, affords a cause for wonder, and both sets of facts intensify the suspicion that the really decisive causes of localization, where the syphilitic or the antisyphilitic virus is at work, lie deeper than the localizing influence of fatigue.

At all events, these two questions, whether syphilis is to be rated as the sole real cause of tabes, and as to the part played by fatigue, are still open for debate, and it has seemed to me that some light could be thrown on them by contrasting the tabetic group of cases with another group which bear, clinically, and also as regards the localization of lesions, a certain resemblance to tabes, and, like tabes, owe their characteristics to certain toxic influences, yet which are seen to differ widely from tabes when intimately studied.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The group of cases to which I refer are those presenting anatomically that form of degeneration of the central nervous system which sometimes accompanies pernicious anemia and which other observers and I have reported as occurring in conditions of nutritive debility not easily classifiable in one category.

The nervous symptoms characteristic of these cases resemble those of tabes in that they affect primarily and mainly the sensory or afferent functions of the nervous system, and thus lead to well-marked incoordination and paresthesias, usually with loss (though sometimes increase) of the knee-jerks.

If, now, the syphilitic infection so frequently met in conjunction with tabes was present mainly or wholly as a matter of coincidence, we might expect to find it present in this latter group of cases also, with at least reasonable frequency. But although I have seen, in hospital or private practice, nearly or quite a hundred instances of this disorder,[1] I have no record of a single case of undoubted syphilis. It is true that the majority of these patients have been women, and it is, of course, quite possible that an occasional instance of syphilitic infection may have been overlooked. In spite of these considerations, however, the contrast between these two groups of cases in respect to the frequency of syphilis is certainly very striking.

Still more striking is the evidence furnished by the comparison of these two sets of cases from another standpoint. The symptoms and lesions of tabes, although numerous, are singularly well defined and characteristic, and much the same may be said of the symptoms and lesions of the "diffuse degeneration." The two sets of cases resemble each other in various respects, but this resemblance is only superficial. In reality both disorders "run true" and show no tendency to overlap or even to approach each other. It is difficult to believe that this statement would be justified if each disease was due, not to one cause, but to any one of several different causes, and especially if the same influence, namely, fatigue, played any considerable part in both cases. Stated in other terms, the argument is as follows: We are dealing, here, with two disorders resembling each other superficially in certain respects, but at the bottom very different from each other, and each "running true" to a remarkable extent. Two hypotheses are advanced to explain their genesis, namely, (a) that they are due, respectively, to special toxins, modified and accentuated doubtless by fatigue and other influences, but not essentially modified; (b) that they may arise as the result of any one of various toxins or other causes, and that fatigue, or nutritive overstrain in particular, may play a notable part in determining the outcome. If the first hypothesis can be accepted the definite character of the two disorders is readily intelligible, and it need excite no wonder that they approach each other in some respects and yet do not really overlap. If the first hypothesis must be rejected and the second can be accepted, these facts are hard to understand. It would be going too far to say that the facts are unintelligible under the second hypothesis, because, of course, it may be that the tabetic degeneration and the diffuse degeneration of pernicious anemia do not owe their peculiarities, in any case, to the action of specific poisons, but represent only particular modes of breaking down of the nervous system under strain. This is probably the explanation of the neuroses, such as migraine. But if this is so and we are not dealing, in the case of the two disorders under consideration, with the action of specific poisons, analogous to diphtheria, but with native tendencies to particular forms of giving way of the nervous system, inducible by various causes, then it is hard to comprehend why syphilis appears to play such an important part in tabes and so trifling a part in the diffuse degeneration. It is also hard to comprehend, on this hypothesis, why these two disorders or modes of breaking down, implying special sorts of weakness, do not oftener coincide. Patients with migraine have also epilepsy at times, and show neurasthenic and hysteric tendencies, but tabetics do not have diffuse degeneration. This is especially striking in view of the consideration that fatigue, if it is an effective agent in inducing tabes, ought to be doubly prone to cause the diffuse degeneration, because it would find itself reinforced by its natural allies, anemia and nutritive debility.

In view of these considerations, taken in conjunction with the evidence already brought forward with relation to the frequency of syphilis in tabes in men, women and children, I think that the argument for a special toxin (or antitoxin) as the essential cause of the disease, while not proved and not to be asserted as positive for every case, is nevertheless a very strong one and deserves especial recognition as a guide to treatment.

106 Marlboro Street.

ABSTRACT OF DISCUSSION

DR. C. L. DANA, New York: I suppose we all agree in the main with Dr. Putnam in regard to the relation of syphilis to tabes; however, we are not only neurologists but also physicians and are dealing with practical and human questions. It happens that I have seen families almost disrupted and even insanity produced by the bald assertion made to the patients, or indirectly to the patients, that because he has tabes he must have had syphilis. If, therefore, there is any justification in our assuming the position that a certain percentage of cases of tabes may be caused by something else, I think we ought to hold on to that view. I think it is an extremely painful sort of position often nowadays to make a diagnosis of tabes. At least one-third of my patients who have tabes honestly do not believe they have ever had syphilis; and yet if they have tabes must I say to them: you must have had syphilis? I should say no. And at any rate there is certainly a syphilis insontium which runs its course without the patients knowing it, and that fact ought to be acknowledged by us and used to soften the situation.

DR. F. W. LANGDON, Cincinnati: I agree that this question of what might be called the ethical relations of the diagnosis are so important that we should give the patient the benefit of the doubt. But there is another and very much stronger reason in that so careful and conservative, and we may say, prosyphilitic advocate as Gowers, positively states that in 10 per cent. of cases of tabes, syphilis can be absolutely excluded. Others give a much larger percentage of exclusion. But that statement of Dr. Gowers is well worthy of consideration in any discussion of this kind.

DR. C. C. HERSMAN, Pittsburg, Pa.: It is well known that the foreign laboring class is a prolific source of the initial lesion of syphilis, and that this class receives but little treatment after the disappearance of the lesion, and yet tabes is not very frequent among these people. Now is the syphilis the cause of the tabetic condition or is it the mercury and iodid or whatever the treatment has been? Also the colored race, possibly the most fruitful source of specific infection, with little attention, is seldom seen suffering from tabes. Those who come to us for tabetic or paretic treatment give a history of from six months to two years' treatment, and often a time at the springs, and they are doomed in spite of the treatment.

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[1] Cf. A Group of Cases of System Scleroses of Spinal Cord, etc., Jour. Nerv. and Ment. Dis., February, 1891; Diffuse Degeneration of the Spinal Cord, Am. Neurol. Assn., May, 1900.

Dr. Julius Grinker, Chicago: Fatigue seems to exert a powerful influence in the production of tabes. Some years ago I examined a woman whose husband had infected her with syphilis and then died of some lung trouble. Being obliged to support her family, the poor woman exerted herself to the utmost, taking in washing at first, later working in the capacity of book agent, which necessitated being on her feet almost constantly. In due time she developed tabes. Her three children, the subjects of congenital lues, suffered from nervous syphilis or parasyphilitic disorders. The oldest boy, an intelligent lad of 19, showed signs of juvenile paresis and died within a year and a half from the development of the first symptoms. Another child, a girl, developed luetic endarteritis, which was followed by thrombotic hemiplegia and death from gummatous meningitis. The only surviving member of this syphilitic family is a blind tabetic boy who peddles newspapers in Chicago. In this family, reported by me in 1904, the element of fatigue seems to have played an important part in determining which part of the nervous system shall become affected. The mother, a hard-working woman, who was in the habit of walking and standing most of the time, developed tabes. The most intellectual of the family, a bookkeeper of unusual ability, suffered from general paresis. The remaining son, a newspaper vender, is the subject of tabes.

Dr. A. D. Brush, Brooklyn: In cases of tabes that I have had the character of the syphilis itself is sometimes overlooked. In a number of cases coming under my care in the hospital I have noticed that the secondary lesions have often been wanting. The patients have had the disease but the secondaries have been slight and the treatment has been little or nothing. If you look at these patients you will notice what has already been stated, that they are distinctly neurotic individuals, and the opinion which I have formed is that the tabes in these cases is due to the prolonged action of an untreated syphilis plus neurotic heredity.

Dr. M. Allen Starr, New York: Before the discussion closes I would like to put myself on record in this discussion as being against the position of Dr. Putnam in the statement that all tabetics are syphilitic. I have careful records now of over 500 cases of tabes in public and private practice. I admit that the histories of the public cases, and by that I mean dispensary and hospital cases, are sometimes insufficient, but in the private cases I have taken the greatest pains to explain to the individual the absolute need of knowledge on the part of the physician of any possible syphilitic causation, and on investigation very thoroughly of both the history and physical condition of the individual, I cannot shut my eyes to the fact that in 20 per cent. of my private cases there has been absolutely no evidence whatever of a syphilitic origin of the tabes. I therefore share Dr. Dana's opinion that to endorse this opinion, which first originated, I believe, with Moebius in Leipzig, that all tabetics are necessarily syphilitics, is to throw a certain amount of doubt on the statements of patients, and to engender a cause of great unhappiness in many families; that I do not think in view of the facts at the disposal of the world—not of any one individual, but of the world—is justifiable. For in a collection of the literature of tabes which I made not long ago, I found that reputable expert neurologists differed from Moebius on the one hand with his 100 per cent. down to a very reputable and very experienced Russian physician of wide hospital experience who took the other position that only 11 per cent. were syphilitic. And the range of neurologists can be put down between those two extreme individuals, and you will find that every neurologist almost in the world has put himself already on record with regard to his percentages of syphilitic cases of tabes, and they all differ. Now, so long as they differ, so long as there is no consensus of opinion, it seems to me unfortunate that the idea should become prevalent that all cases of tabes are syphilitic.

Dr. James J. Putnam, Boston: I should entirely agree with Dr. Starr and Dr. Dana in feeling that we have a social duty with regard to patients' families, and I have always taken the position Dr. Starr asserts, namely, that I was not willing to claim that a causal relationship between syphilis and tabes necessarily exists. But I think it is quite different when we are talking among ourselves and discussing evidence. I am not stating certainties but increasing probabilities, partly in the interest of treatment.

As regards Dr. Fisher's remarks, I believe and stated in my paper that I also have seen the incoordination of tabes brought on abruptly by a considerable exertion—a long march in the snow. I think that such fatigues act mainly like any general strain. I doubt very much whether any one can say broadly—although now and then it may be the case—that a march is bound to bring on incoordination of the legs when it could not bring on atrophy of the optic nerve or throat affection. I admit that there is something to be said for the localizing effect of fatigue and strain, but I have seen, for example, a fall from the steps of a street car also bring on incoordination very rapidly, almost abruptly. The case for overstrain as a localizing cause is not so clear that for the sake of it we should neglect the evidence for other causes of more obvious value, as genetic nutritive defects or specific toxemias. There are many exceptions to the rule that those who work with the eyes are especially prone to optic atrophy, those who use the legs to locomotor ataxia.

THE FEEDING OF IMMATURE AND ATROPHIC INFANTS *

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SAN FRANCISCO

Predisposing causes to infantile immaturity and atrophy may at times be detected in the pregnant woman, and certain of them later may be of considerable value in determining why the usual milk formulas fail to nourish the child.

Scant consideration is given to the fact that an individual's existence really commences at the time of conception and too much importance is attached to the usual expression which merely states the dividing line between intrauterine and extrauterine life. At conception the child is endowed with all the ills or graces of a bad or a good ancestry and little can be done to counteract the immutable laws of heredity, but with environment, intrauterine as well extrauterine, the physician can do much either to harm or to aid the growing individual. It is a well-recognized fact that *pregnancy associated with marked anemia or toxemia predisposes to poor fetal development*, which may be evident at birth or which may be expressed later by failure to digest and assimilate properly the natural food of the infant or of the carefully prepared modified milk formulas. This is frequently seen in syphilis, alcoholism, poverty, gonorrhea and nephritis and in some cases of heart disease and tuberculosis. In large cities the combination of alcoholism, poverty and gonorrhea seems to be almost as serious to the child as is syphilis.

The long ten months of intrauterine life affords the physician a very favorable time for feeding the prospective immature or atrophic infant through the blood of the mother. Too little attention is paid the average case of pregnancy and too much is left to chance and Nature. *It is wise to consider the husband* and to remember that, no matter what his station in life may be, he may have a very bad past venereal history. In suitable cases, mercurial treatment antepartum is of more value to the child than a consideration later of intricate algebraic equations of theoretical milk formulas.

An infant with full forty weeks' intrauterine gestation may be decidedly immature, while another born at the thirty-sixth week may be full of vigor and good health. Weight is of more importance than age, and an infant weighing less than 2 kilos (4.5 pounds) at birth is immature.

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* Read before the Sacramento Society for Medical Improvement, March 17, 1909.

With this weight there is a paucity of subcutaneous fat, the muscles are poorly developed, the nervous system unstable and the powers of digestion weak. Atelectasis is more or less present, while the increased ratio of skin area to weight produces a condition of unstable heat regulation. Added to this the amount of blood and the capacity for producing new blood elements is much below par.

An atrophic infant, although normal at birth, tends gradually toward the type of the immature. The thickness of the intestinal wall is diminished and there is evidence that certain needed glandular structures are in abeyance. Changes have been reported in the adrenals, in the parathyroids and in the mesenteric glands, while Wentworth has recently demonstrated that secretin, which is necessary to activate the pancreas, is lacking in the epithelial cells of the intestines of new-born and atrophic infants. From recent investigations by Pawlow, Starling, Bayliss and other physiologists it seems probable that there exists in all vertebrates a number of so-called hormones whose function it is to stimulate or activate the different digestive ferments. They are undeveloped at birth and are functionally inactive in atrophic infants. Speculation is rife as to what aids and what retards the action of these hormones. Wentworth suggests that certain inherent properties of mother's milk are needed. However, immature and atrophic infants can be reared without resorting to mother's milk, and, while granting that mother's milk is of the greatest aid for a proper infant nutrition, I am inclined to believe that failure of development is largely due to food intoxication caused by improper feeding—particularly the too early resort to artificial feeding or to too high percentages of butter fat. With mother's milk failure can follow from the same reason.

A delicate infant must have fat, proteid, carbohydrate, salts and water of such quantity and relative proportions as will meet the possibilities of its digestion. Food is not in the body until it has been absorbed by the walls of the intestine, and the food that is absorbed is not of use unless it contains the food essentials competent to meet the needs of the body cells. Carbohydrate and fat are needed for immediate consumption to furnish energy or for storage purposes and padding. Proteid is essential to the growth of cells as well as for the production of new cells. The salts of milk plasma are needed by all the cells of the body and probably aid with the casein in the development of the digestive tract.

Excess of proteid is thrown off by the kidneys, causing an increase of nitrogenous elements in the urine. Excess of sugar may cause intestinal fermentation, may interfere with the digestion of fat, and aids in the production of systemic intoxications. Excess of fat not only causes food intoxications, but abstracts from the body valuable alkalies, which are used to make soap of the fatty acids in the intestines, and causes an increase in the ammonia excretion of the kidneys. Excess of salts interferes with the proteid digestion in the stomach and is a factor in the production of edema.

On the other hand, a deficiency of any of the food elements will cause sooner or later serious disturbances in nutrition.

In order to avoid the dangers of over-feeding or under-feeding various systems of percentage feeding have been suggested by a number of American authors. A great deal of good has been accomplished with the percentage method. It inaugurated a logical line of thought and placed infant feeding on a more or less scientific foundation, but practically it caused an over-feeding of babies. Certain French authorities, notably Budin and Heubner, have devised a system of feeding by which the caloric value of the food bears a certain relation to the weight of the child. This is another marked advance in infant feeding, for by asserting certain standards it has permitted not only a better knowledge of the proper food values, but has afforded a means for determining the relative amounts of the different food elements that should be fed. While it is of great value to feed normal babies according to the principles of the percentage method and while it is of greater value to feed them according to the caloric value of the food, it is most reprehensible to attempt to force an immature or atrophic baby to digest mathematics or to persist in feeding that which the baby does not want and can not digest simply because it looks well on paper. The baby must be studied clinically and physiologically and the food adjusted to meet the powers of its present digestion and to aid in the development of its digestive tract.

TABLE 1.—CLINICAL CHART. IMMATURE INFANT

Day.	Date. 1908.	Stools.*	Skin.	Cord.	Notes.	Treatment.
B	Mar. 26	m ii	Red	Dry	Cotton jacket incubator at 40° C.	
1	27	m iii	Red	Dry	Unable to nurse, regurgitates food.	Gavage.
2	28	m iii	Clear.	Dry		Gavage.
3	29	m iii 6 i	Clear.	Dry	Eyes puffed	Gavage.
4	30	g iii	Clear.	Dry		Calomel, gr. 0.1; colon irrigation.
5	31	g ii y i	Clear.	Dry		Gavage.
6	April. 1	y ii g i	Clear.	Dry		Gavage.
7	2	y ii g i	Clear.	Dry		Gavage.
8	3	y i g i	Clear.	Dry		Gavage.
9	4	y iii	Clear.	Off.		Calomel, gr. 0.1.
10	5	y iv	Clear.	Dry	Edema: hands, feet, eyes.	Colon irrigation.
11	6	g i y ii	Clear.	Dry	Slight edema: feet	Gavage.
12	7	g i y ii	Clear.	Dry	No edema	Gavage.
13	8	y iii	Clear.	Dry		Gavage.
14	9	y ii	Clear.	Dry		Castor oil min. xv.
15	10	y iii g i	Clear.	Dry	Slight edema: hands, feet.	Gavage.
16	11	y iii	Clear.	Dry	Slight edema	Gavage.
17	12	y iii	Clear.	Dry	No edema; nurses bottle.	
18	13	y ii	Clear	Dry	Nursing well	
19	14	y i	Clear.	Dry		
20	15	g i y i	Clear.	Dry		
21	16	y ii	Clear.	Dry	Removed from incubator.	

Condition on discharge, May 13, 1908: Eyes, nose, mouth, anus, genitals and extremities O. K. Navel healed. General condition good.

At the University of California Hospital I have developed a system of bottle feeding that not only succeeds with most of these delicate infants, but also is comprehensible to the nurse preparing the food and instructive to the student. The plan consists of insisting on careful observation of the physiologic condition of the baby and of maintaining a written record of the foods given and the effect the food has had on the child. Clean ingredients and clean apparatus are, of course, necessary. Certified milk is used and has proved of the greatest aid. This milk comes from tuberculous-free cattle, is produced according to the requirements of the Milk Commission of the San Francisco County Medical Society, has a germ count of less than 10,000 per c.cm., is cooled, bottled and sealed at the producing farm immediately after milking and averages 3.6 per cent. butter fat. Various top milks are obtained from the quart bottles of milk with a Chapin dipper which average as follows: Top 12 oz. 8.5 per cent.. top 14 oz. 7.5 per cent., top 16 oz. 6.5 per cent., top 20 oz. 5.5 per cent., lower 20 oz. 0.5 per cent. fat. Whey from whole milk averaging 1 per cent. fat and 1 per cent. albumin and whey from skim milk are also used. The different milks average about 5 per cent. sugar and 3.5 per cent. proteid (except whey).

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* In this column, m means meconium, y, yellow, g, green.

For carbohydrates pure milk sugar and Robinson's barley are used. Other carbohydrate foods have at times been used and the barley has been dextrinized in certain cases of atrophy, but as a rule good results have followed the use of a limited variety of carbohydrates. The physician should know the actual composition of any prepared or patent food he uses. Knowing the actual ingredients of a proprietary baby food permits of its intelligent use, and with some cases of atrophy the different varieties of carbohydrate have considerable value, but their ignorant use, blindly following the commercially scientific directions accompanying them, leads only to confusion and is a mute acknowledgment that one is unfitted to cope with the difficulties of malnutrition. The so-called foods can all be prepared, if necessary, by dextrinizing the different flours.

TABLE 2.—FEEDING CHART. IMMATURE INFANT

Date. 1908.	Milk. Per cent.	Sugar. Lactose Per cent.	Salt. Nacl 20 per cent. Solution.	Water. Per cent.	Number of Feedings.	Total Amount. Ounces.	Calories.	Whey. Per cent.	Treatment.	Per cent. Fat.	Per cent. Sugar.	Per cent. Barley.	Per cent. Prot.
Mar.													
27	0	6	0	100	24	6	5			0	6	0	0
28	0	0	0	0	12	6	69	100	Gavage	0.9	5.5	0	0.9
30	0	0	0	0	12	12	138	100	Gavage	0.9	5.5	0	0.9
April.													
1	0	0	0	0	12	18	207	100	Gavage	0.9	5.5	0	0.9
4	0	0	0	0	12	24	276	100	Gavage	0.9	5.5	0	0.9
6	Up 10 5	5	2.5	0	12	24	447	92.5	Gavage	1.2	10.2	0	0.9
9	7.5	5	2.5	0	10	24	467	90	Gavage	1.4	10.2	0	1
11	10	5	2.5	43.5	10	24	360	44	Gavage	1.2	7.9	0	0.7
13	12.5	5	2.5	42.5	10	24	381	42.5	Bottle	1.4	8	0	0.8
14	15	5	2.5	41.5	10	24	401	41		1.7	8	0	0.8
18	20	5	2.5	77.5	10	24	336			1.8	6.1	0	0.7
20	22.5	5	2.5	75	10	24	360			2	6.2	0	0.7
22	25	5	2.5	72.5	10	24	384			2.2	6.3	0	0.8
29	27.5	5	2.5	60	10	24	420	Barley 5% 10		2.4	6.5	0.5	0.9
May.													
1	30	5	2.5	57.5	10	24	441	10		2.7	6.5	0.5	1
6	Up 16 32.5	5	2.5	55	10	24	387	10		2.2	6.6	0.5	1.1
10	35	5	2.5	52.5	10	30	520	10		2.4	6.7	0.5	1.2

Salts of sodium or magnesium (chiefly sodium chlorid) are used to aid the gastric digestion of casein and to promote the absorption of the different proteids. Occasional resort is made to buttermilk, malt sugars, and dextrinized gruels, but as a routine such feeding has not been found equal to the carefully prepared and modified fresh cow's milk.

Each immature or atrophic infant is fed according to its power of digestion as expressed clinically. The clinical chart is not difficult to keep and is absolutely necessary for success with these difficult cases. For the first few days little attention is paid to the percentage value or to the caloric value of the food. It is usually necessary at first to feed the immature and some of the atrophic babies by gavage. Body warmth must be maintained by artificial heat and stimulants if necessary mus [illegible] or normal salt solution by [illegible] is usually necessary to clear the intestinal tract of the atrophic babies.

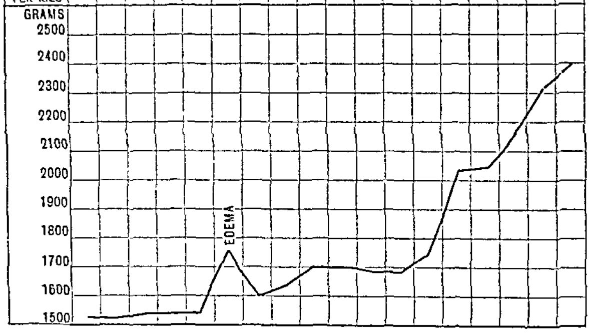
The immature babies are started with sugar solution (5 per cent.) or with salt solution (0.5 per cent.) and the atrophic babies with whey in order to ascertain the amount of liquid the infant will retain. Gradually the sugar solution is replaced with whey and the whey replaced with one of the top milk, whole milk or fat-free milk mixtures according to the behavior of the child. Barley water is not added until the food contains from 20 to 30 per cent. of milk, unless the sugars fail to agree. The quantity of food is increased to meet the desires of the child and its ability to retain. The relations between the weight chart, the clinical chart and the feeding chart are constantly studied. At intervals the percentage formula of the food and the calories, with the energy quotient and the proteid ratio, are estimated to avoid a continued over-feeding or under-feeding.

A description of the feeding chart used will elucidate how practically the food for these infants is ordered and controlled. The chart is ruled in columns, in one of which is indicated the quantity of food to be prepared, while in a second is noted the number of feedings to be given. In a third column marked "milk" is stated the kind of milk to be used—skim milk, whole milk, buttermilk, or indicated top milk—and the percentage that this milk shall make with the total quantity of food ordered. In a fourth column is placed the order for starch. It is here necessary to know the strength of the gruel prepared by the nurse. I have found that a rounded tablespoon of Robinson's barley to 12 ounces of water when cooked for half an hour and the water loss replaced makes a 5 per cent. solution of barley. In the column marked starch is stated the strength of the gruel and the per cent. this gruel shall make with the total food ordered. In similar columns the percentage of sugar, salt, limewater, or other ingredient desired is placed, and finally, and most important, must be charted the percentage of water necessary to be added to make with the other liquids 100 per cent. In preparing the food the nurse multiplies the total quantity of food ordered by the different percentages in the different columns in order to ascertain the amount of each ingredient to use.

When an immature or atrophic infant can digest whey, 10 per cent. of milk (usually top milk 16) is added and this is increased gradually but constantly until the baby can digest from 30 to 40 per cent. of milk. With this 5 per cent. of sugar and 0.5 per cent of salt is also given and 10 per cent. of the 5 per cent. barley gruel added and rapidly increased as the whey is eliminated.

It seems to me that as a rule these infants do better when the ratio of fat to proteid in the food is not more than two to one, and, while the number of calories needed for the normal infant may not be more than 100 per kilo of body weight, and can gradually be reduced as the child grows older, I have found that it is necessary to feed the immature and atrophic infants as high as 250 calories per kilo for several weeks at a time; and with food of this high caloric value I have seldom found signs of over-feeding, except when the fat calories ran high. However, when a baby digests fat all right it is fed fat, but is watched carefully and the fat is reduced with the first signs of indigestion.

DAY	B	1	2	4	6	9	11	14	16	18	19	23	25	34	36	41	45	48
DATE	MAR 26	27	28	30	APR. 1	4	6	9	11	13	14	18	20	29	MAY 1	6	10	13
TEMP.	36^1	37	38	37	37	36	37	36^2	36^2	36	36^2	37	36^2	37	37^4	37^4	37	37
CALORIES PER KILO		3	43	90	134		281	288			232	198	205	187	216	184	225	



Weight chart of immature infant. Birth expected May 3, born March 26. Mother i-para; one miscarriage at third month, two years ago; symptoms of toxemia during present pregnancy.

The weight chart urges always for more food, and the clinical chart acts to hold this in check. Intelligent interpretation of these two indicates the sensible way to feed in these interesting problems of malnutrition.

240 Stockton Street.

A TERATOMA OF THE HYPOPHYSIS *

D'ORSAY HECHT, M.D.
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CHICAGO

PATHOLOGIC REPORT BY MAXIMILIAN HERZOG, M.D.†

Neither from the earliest collation of cases nor even from the more recent ones do we seem in a position to estimate accurately the frequency of hypophyseal tumors. The cases are reported from such widely different premises, most often according to points of special clinical significance. Thus we find it necessary to search the records of ophthalmology, treatises on acromegaly, contributions to intracranial surgery, journals devoted to radiography, and so forth, in getting at information bearing on the pathology. Mindful of this difficulty encountered in making up an exhaustive tabulation of cases, I think we may, nevertheless, assume that tumors of the hypophysis and infundibulum are quite rare.

As concerns the variety of neoplasms, we meet with simple hyperplasia, adenoma, glioma, sarcoma, carcinoma and teratoma. The teratomata of the gland are, indeed, a very rare form of tumor. Boyce and Beadles, in their large collection of cases, include three of this variety reported by Beck, White and Sainsbury; in the last mentioned of these the tumor had its origin not in the gland proper, but in the region of the gland. This particularity as to the original seat of the growth should not be construed as an idle distinction, for there is a difference both in the pathologic and clinical aspects of a tumor arising from the gland or invading it from its immediate neighborhood.

The teratomata are in their nature a fetal type of tumor and present structural changes identical with those noted in the case herewith reported. Kon has very recently reported a case of cretinism with a teratoma in the hypophyseal region, a case of periepithelioma and one of angiosarcoma with extensive hemorrhage. I contend, and for reasons which the pathologic report will no doubt make clear, that the tumor in this case in all probability arises from the anterior portion of the gland.

Bearing in mind the embryonic development of the anterior or glandular portion of the hypophysis as derived from the oral ectoderm, it is to be wondered at that the teratoma is not a more frequent factor in the classification of hypophyseal neoplasms. Bruns divides the tumors of the hypophysis, which he says in the main arise in the anterior and spread to the posterior portions of the gland, into homoplastic and heteroplastic. The homoplastic growths are made to include the simple hypertrophies, colloid and cystic enlargements and the adenomata. The heteroplastic are the round-cell sarcomas, the teratomata with their epithelial, cartilaginous or bony content, the primary and metastatic carcinomas, lipomas, tubercles and gummata; of these, he states, the sarcomas are most commonly met.

The clinical notes of this case will appear somewhat abridged in favor of a more detailed report of the pathologic findings which, in my opinion, are unique and, so far as I have been able to learn, almost without precedent in the literature. My sincere thanks are due my friend and colleague, Dr. Isaac A. Abt, for the privilege of this case citation, and I owe grateful acknowledgement to Dr. Maximilian Herzog, formerly pathologist to the Michael Reese Hospital, both for his valuable interpretation and painstaking arrangement of the pathologic material.

REPORT OF CASE

Summary.—A tumor of the hypophysis, correctly diagnosed as regards neoplasm, but not localized; absence of sufficient focal symptoms; skiagraphs unsatisfactory but faintly suggestive of cerebellar involvement. Tumor not found at operation because of its deep situation. Termination in death six hours after operation. Autopsy reveals a tumor of the hypophysis proved to be a teratoma arising in all probability from the gland.

Patient.—K. F., a slender blond girl, aged 11, American born, was referred by Dr. Tieken to the care of Dr. Abt and admitted to the service of the latter at the Michael Reese Hospital, May 27, 1908. The parents were regarded as healthy; so were their direct and collateral antecedents, as far back as could be ascertained. The mother had experienced several miscarriages and a still-birth, these, however, occurring after the patient was born.

History.—The birth of the girl was spontaneous, at full term, and in all respects normal. Except for whooping cough, measles and varicella, her childhood was uneventful. At 8 she experienced three distinct attacks of appendicitis with general peritonitis. During a free interval the appendix was successfully removed and she regained her health, remaining perfectly well for the next two years. About one year before examination, at the age of 10, she complained of disturbed vision and headaches that made it difficult for her to pursue her studies. The headaches were frontal, most often occasioned by mental strain during study hours, and in their earlier exhibition were, on the whole, quite irregular. Five weeks after their onset they became increasingly severe and diffuse, extending well back to the nape of the neck, and attended with a feeling of more acute pain back of the eyeballs and in the ears. At this time vomiting appeared, at first only occasionally at breakfast, but later with regularity after each meal. The vomiting, far from being projectile, was preceded by a feeling of nausea, affording the patient sufficient time conveniently to leave the room and use some receptacle. Five weeks prior to admission the right eye turned strongly inward and remained so. Periods of dizziness were occasional. Always a sound sleeper, the patient now rested well only in the fore part of the night, after that tossing about with headache. Nervous irritability was marked at times and induced by the slightest noises, such as the ordinary footfall or the low-pitched soft voice. The mentality, according to reports, seemed in no wise impaired, nor had the child's disposition changed except for the late outbursts of irritability. Convulsive seizures had never occurred. Neither weakness of the extremities nor clumsiness in any of the voluntary movements had ever been noticed. There was marked constipation, but no difficulty with micturition. During the last five months of her illness there was an increasing aversion for food.

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* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

† From the Pathological Laboratories of Michael Reese Hospital

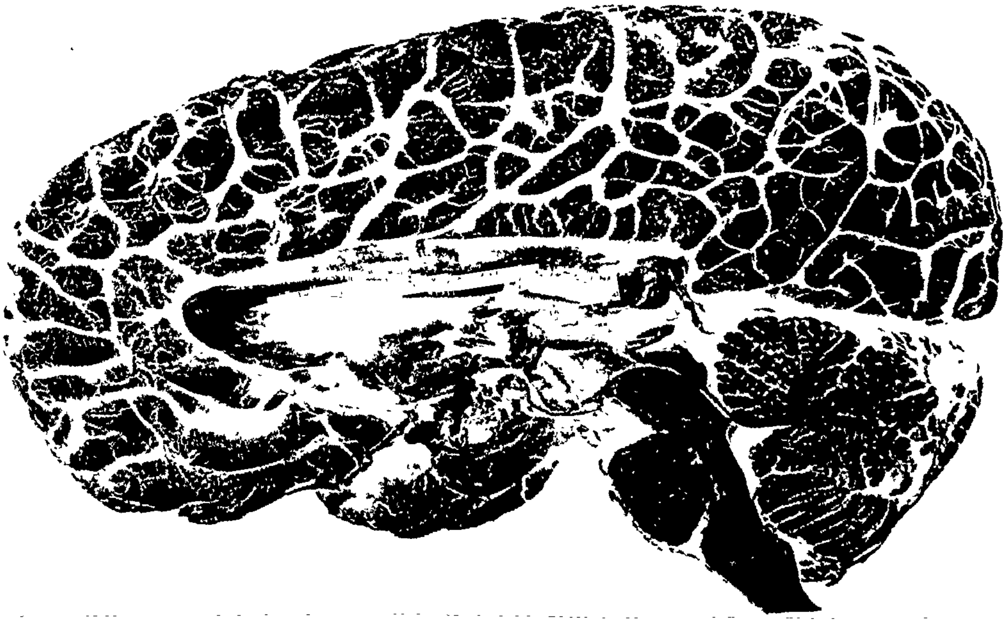

Fig. 1.—Median sagittal section of brain showing tumor of the hypophysis (Hecht and Herzog).

Examination.—The physical examination, made and noted under date of May 28, was as follows: The general nutrition was fair. The head seemed slightly retracted. Pupils were large, equal, regular, with normal response to light and accommodation. Photophobia was present, and in this connection it should be added that the eyes had received atropin for fundus examination. There was complete right external rectus paralysis. Dr. E. F. Snydacker reported bilateral choked discs, with two or three diopters of swelling in each eye. Ear examination made by Dr. Ira Frank proved negative. The teeth, somewhat irregular as to shape and arrangement, were otherwise normal. Some neck rigidity was present. There were no palpable glands. Heart, lungs and abdominal viscera were negative. Muscular strength seemed normal. The gait was not much disturbed, but on finer tests in the recumbent posture some loss of coordination in the legs was evident. Sensory symptoms were absent. A positive Babinski was obtained on the right side. The skin and tendon reflexes were everywhere present and equally brisk. Ankle clonus was absent; likewise spasticity. The stereognostic sense was not tested. Hearing was normal; vision was equally defective in both eyes to the extent that the patient could not read type, but was able to discern objects and differentiate those persons having access to the sick-room.

Clinical Notes.—On day of admission an afternoon temperature of 99; thereafter a daily variability of from 97.3 to 99. Pulse rate, 80 to 104.

Laboratory Data.—A. Blood findings, May 27, 1908: Hemoglobin, 95 per cent.; white cells, 10,600; red cells, 5,372,000. May 30: Leucocyte count, 82,000.

B. May 31: Von Pirquet vaccination test on right arm (Dr. Davenport), negative.

C. May 31: Ocular tuberculin test, one minim of a 1 per cent. solution injected in the left eye, likewise negative.

D. May 31: Blood. Tuberculo-opsonic index taken and found to be 1.19.

E. Skiagraphs doubtful, it having been thought by several who saw them that the shadow cast was, if anything, in the cerebellar area, thus prejudicing one in favor of a diagnosis of cerebellar tumor.

F. Daily urinalysis negative.

The patient was seen by Dr. A. Church, and later by Dr. L. L. McArthur, who performed the operation on June 8. The operative notes in very abbreviated form read as follows:

Operation.—June 8, 1908, by Dr. McArthur, Dr. Hoover assisting. Anesthetic, ether. Head prepared in the usual manner for brain operations for two days prior to operation. Fissures of Rolando mapped out on either side. Brain punctured near the left occipital and left posterior parietal regions. Punctures made with fine drill and aspirating needles. No fluid obtained in occipital puncture, but about 3 or 4 c.c. of a clear fluid containing three or four white, hard floccules was obtained by puncture in the posterior parietal region. Fluid saved for diagnosis. Semicircular incision, base downward, through skin and subcutaneous tissue to periosteum. Incision began a little above Reed's base line, about in a vertical line drawn through the left external auditory meatus, arching upward and backward, describing a semicircle, and ending about four inches posterior to its own origin. All bleeding vessels caught and ligated with fine gut ligatures. Periosteum incised in similar manner about 0.75 cm. inside scalp incision. Edges of periosteum raised with an elevator. Trephine hole.

about three-eighths of an inch in diameter, made in anterior lower angle of wound and the bone cut through from before backward with a rongeur forceps. Base not cut through. Upper edge of bone flap raised and steadily increasing pressure applied on elevators until bone fractured across the base. Bone and scalp flaps now laid back together. Dura found intact and apparently normal, but ballooning up strongly through skull opening, showing a greatly increased intracranial pressure. Aspirating needle again passed into posterior parietal region, needle passing inward, upward and slightly forward. Several cubic centimeters of fluid withdrawn. Dura carefully washed with warm normal saline; all rough edges of bone smoothed, and the bone flap replaced. Scalp incision closed with continuous waxed silk suture. Wound sealed with gauze and collodion, excepting about 1 cm. at posterior inferior angle. A large dry dressing applied. Stimulating enema given on table. Patient put to bed in poor condition. Foot of bed elevated.

Cerebral Fluid.—A smear of the cerebral fluid sent to the laboratory was reported on by Dr. Herzog as follows: A very few mononuclear cells seen in the sediment after centrifuging; some red blood corpuscles; no bacteria of any kind. Small solid particles and carbonate of lime, soluble in dilute hydrochloric, with giving off of carbon dioxid. No tubercle bacilli. No evidence of cysticercus or echinococcus. Shortly before exitus, which followed operation in six hours, one-half ounce of fluid was aspirated through the wound by Dr. McArthur, examination of which was negative.

The autopsy was performed within six hours after death.

DESCRIPTION OF TUMOR

The following description of the tumor and histopathologic comment by Dr. Herzog is of interest:

"When the tumor was removed with the brain, it was found that it had markedly corroded, thinned out and excavated the sella turcica, on which it rested. The neoplasm (Fig. 1) is more or less globular in outline and has a diameter of about ¾ inch from above downward, and about one inch from before backward. Its longest axis is not absolutely horizontal, but is oblique, so that the anterior attached pole of the tumor is on a higher level than the posterior free end. At the anterior pole the tumor is attached in such a manner that it has become fused with and presses on the optic commissure. It is also fused to the corpora mamillaria and to the floor of the third ventricle. The pedicle of the hypophysis has disappeared. The neoplasm is apparently everywhere surrounded by a capsule, except where it is fused to tissue of the cerebrum proper. The tumor substance itself looks rather irregular, heterogenous, and contains small calcareous particles. The cavities of the lateral and of the third ventricle, although markedly enlarged, may, nevertheless, be considered of moderate size. The aqueduct and the cavity of the fourth ventricle are of normal configuration. In removing pieces of the tumor for microscopic examination, portions of the floor of the third ventricle had to be taken along with the tumor substance.

"The tumor tissue is composed of a variety of cellular elements. It appears that the original tumor parenchyma has been formed by epithelial cells of the anterior portion of the pituitary body. The proliferating cells have formed quite irregular gland-like or alveoli-like spaces in a stroma, of very loose vascular embryonal connective tissue composed of stellate cells. Where the proliferated tumor cells have arranged themselves into more or less globular spaces we find these alveoli either completely filled with epithelial cells, or there is present only an outer shell of epithelial cells and an inner mass of hyaline material. The latter, however, is not perfectly homogeneous, like typical colloid, but rather scaly and shows clearly its derivation from degenerating cells which have been moulded together in the interior of the follicles, but have not become completely fused into a homogeneous mass. On the whole, these bodies in the interior of the follicular spaces look somewhat like the epithelial pearls of cornifying carcinomata, although the material does not show any true cornification. It stains with Van Giesen from an almost pure yellow to deep yellow with some red, and even to a deep reddish orange. The epithelial cells forming the follicular spaces are cuboidal or short columnar. The latter shape occurs in situations free from pressure. Here the basal vesicular nuclei are oval, while the shorter cubical cells have spherical nuclei. The latter possess a rather finely granular chromatin, while here and there one or two nucleoli are visible. The protoplasm of these cells is very finely granular and takes but a very faint stain. These cells have not only formed the follicular or alveolar spaces, but have also proliferated in a very irregular manner, and this has led to the formation of irregular masses and tracts of cells. In some places giant cells with numerous [illegible] nuclei are seen. The origin or derivation of these cells is [illegible] clear.

"It is found on microscopic examination that the hard portions of the tumor which were noticed when it was [illegible] of osteoid tissue. Part of the latter is composed of [illegible] primitive fibrils and fibril bundles which are [illegible] treated with lime salts, some very little, others [illegible] Aside from the lamellar structure, the bone [illegible]

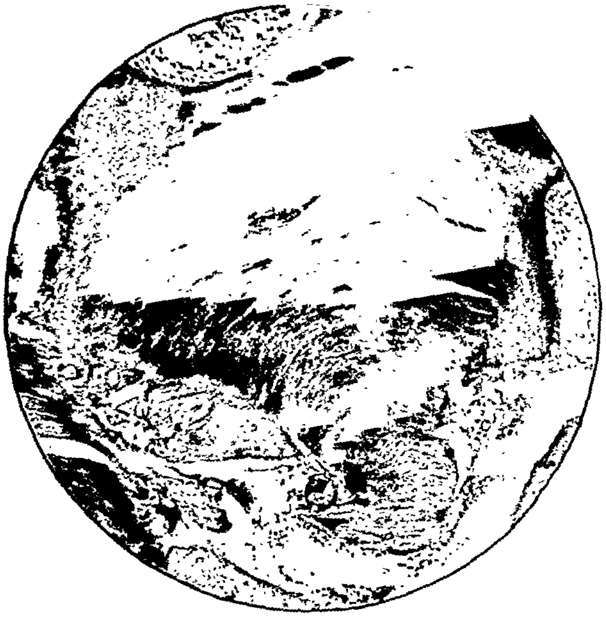

Fig. 2.—Section of decalcified osseous portions of tumor, showing strongly calcified bone fibrils. Magnified 100 diameters.

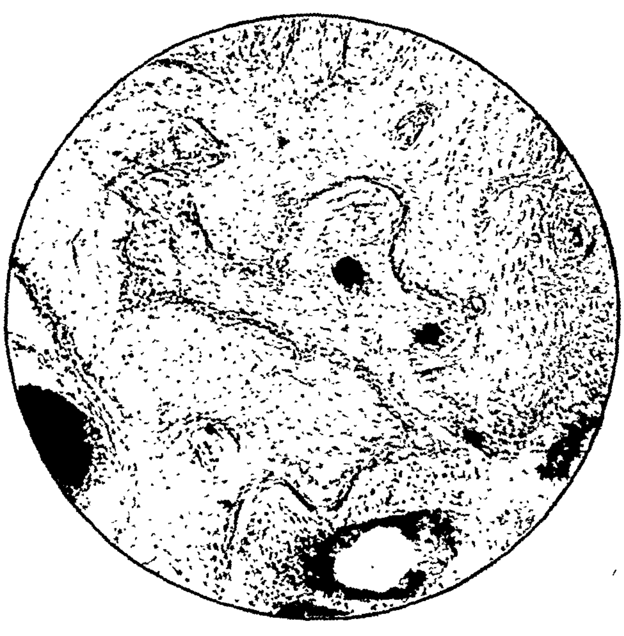

Fig. 3.—Same as Figure 2, showing marrow spaces and lamellated bone. Magnified 100 diameters.

shows no other differentiation. Again, other portions of the bone show all of the osseous elements of bone—corpuscles, Haversian canals, concentric lamellæ and cellular marrow spaces.

"Where the tumor has become fused with the floor of the third ventricle, we find a loose edematous connective tissue, with numerous coarse and delicate wavy fibers, forming a wide-meshed reticulum. To the outside of it is seen a portion of the chorioid plexus; its ependymal cells have proliferated and formed branching villous excrescences. No cartilage was found in the tumor, nor any glia cells or fibers.

"This tumor, then, of a mixed type, shows epithelial elements derived from the anterior portion of the pituitary body, and osteoid tissue, very probably derived from any early embryonal inclusion."

DEVELOPMENT AND NORMAL STRUCTURE

Essential to any epicritic consideration of the pathologic features in the case at hand is a thorough understanding of the development and normal architecture of the hypophysis.

This structure, for so long called the glandula pituitaria, is a somewhat flattened oval body, slightly broader than long, o[illegible] with an average weight of 0.69 gm. ([illegible]), resting in the sella turcica of the sphenoid bone. Bilobate gland that it is, it consists of an anterior and posterior portion, united and enveloped in a fibrous capsule, which is a special prolongation of the dura. These portions are histologically and histogenetically dissimilar. The anterior lobe, the larger and darker of the two, is bean-like in shape and concave behind, where it embraces the smaller posterior lobe. It is glandular in structure, and, being developed embryonically from a hollow protrusion, derived from the primary oral ectoderm, is sometimes referred to as the oro-hypophysis. The distal end of this protrusion (Böhm and Davidoff) or pouch comes in contact with the anterior surface of the lower portion of the infundibulum and becomes loosely attached to it. As the bones at the base of the skull develop, the attenuated oval end of this pouch atrophies, the distal end becoming finally completely severed from the buccal cavity. When this has occurred, the anterior portion of the gland is situated in cartilages, which later on become parts of the sphenoid bone, and, as Dr. Herzog suggests, it is easy to see how some of these sphenoidal cartilages might become included in the anterior portion of the hypophysis and thereby become the matrix of a tumor containing bone. It is fair to assume that this is what actually occurred in this case.

Several writers have ventured the opinion that any variations noted in the size of the gland as a whole are perhaps due to the variable dimensions of this glandular portion.

Its close resemblance to the thyroid has been a matter of repeated comment.

The vascular supply to the anterior lobe comes from the internal carotid by five branches coming from the trunk within the cavernous sinus. The posterior lobe is supplied by arteries that pass down with the pia mater of the infundibulum.

The posterior lobe, connected by a solid stalk with the infundibulum and regarded as a continuation of it, is developed from that part of the embryonic brain which later goes to form the third ventricle. In marked contrast to the anterior lobe, it is in its nature a cerebral structure, and for that reason by some called the neurohypophysis.

103 State Street.

ABSTRACT OF DISCUSSION

Dr. Harvey Cushing, Baltimore: I think it important in relation to tumors of the hypophysis to distinguish between tumors arising from the hypophysis itself and tumors merely in the infundibular region. Tumors in the interpeduncular space may exist with or without disturbance of the hypophyseal function. That is what we are especially interested in. Tumors which disturb the hypophyseal function may be associated with over-activity or under-activity of the gland. Those are things which, as physicians and neurologists, it is incumbent on us to distinguish. The case that has been reported by Dr. Hecht is very similar to a case that was in my care a few years ago (also a teratoma), in which there were glandular elements, and I doubt not that there were active glandular elements in this case of Dr. Hecht's sufficient to enable this child to continue to live, for I emphatically believe that the hypophysis or a portion of it is necessary to maintain physiologic equilibrium.

It will be necessary, I think, in every case before one can say that this is a tumor of hypophysis or a tumor in its neighborhood, that serial sections be taken, and it is important in this case that a careful search be made for remnants of the flattened, possibly distorted pituitary gland. These elements which have been demonstrated are suggestive of the fact that the tumor actually may have been of hypophyseal origin; but we should bear in mind the developmental character of structures in this neighborhood, the favorite site for teratomata. The important thing to determine, of course, is what the growth in the neighborhood has done to the gland.

Dr. Hecht has devoted some of his investigations to considering the effect of the growth on neighboring structures. Of course, disturbance of the optic nerves and other structures in the neighborhood, such as pressure on some of the oculomotor nerves, often occur whether the hypophysis has been affected or not; but I think that primary optic atrophy is the usual early symptom of pressure here. That is the striking thing—a primary optic atrophy without an associated choked disc. One can have a choked disc, or optic neuritis if you chose to call it that, superimposed on primary optic atrophy. But I think you will always find in these cases, and I think it will prove to have been present in Dr. Hecht's case, that there was an internal hydrocephalus present when the child died, if it had choked disc of three or four diopters. The pressure of the nerves themselves, without the associated condition of hydrocephalus will induce a primary optic atrophy, and it is only when the growth in this neighborhood reaches such size that it interferes with the outflow of fluid through the foramina of Monro that it causes dilatation of the optic sheaths and leads to choked disc.

Dr. Maximilian Herzog, Chicago: Dr. Cushing has referred to the embryology, which has also been discussed in the paper; but in order that you may fully understand the histogenesis of the tumor, it is perhaps desirable that I should refer briefly to the development of the hypophysis. The latter takes its origin from a double source, one part develops from that portion of the brain which later becomes the floor of the third ventricle, it is called the infundibulum, while the posterior or lower portion is developed from an offshoot of the primitive oral cavity. So that, from an embryologic standpoint, the hypophysis is quite complicated.

I have not made a complete serial section examination of the tumor in question because that would have necessitated a destruction of the specimen, which was not desirable. The tumor shows epithelial portions which arise from the posterior portion of the hypophysis, that portion which develops from the early oral epithelium. Evidently those proliferating epithelial cells have retained their physiologic function; they have formed a material somewhat colloid in character; and as I understand the clinical history of the case, there was no disturbance of nutrition at all in the child, which would indicate that the hypophyseal physiologic function was not entirely missing nor greatly disturbed. The child did not die from the tumor, but the operation led to a fatal issue.

There are three types of mixed tumors or teratomata, one type which imitates a certain organ of the body, for instance, an ordinary dermoid of the skin; the second type, which imitates an entire embryonic region, the best type of which are the embryonal adenosarcomata of the kidney; and then, thirdly, tumors which may contain all the tissues of the body, and these are the most complicated mixed tumors, arising from the germ cells of the ovary or testis. This tumor belongs to the second type. It shows epithelial structures derived evidently from the early oral epithelium, and shows bone which is probably derived from the early cartilages which later form portions of the sphenoid bone.

Prof. Max Nonne, Hamburg, Germany: I wish to speak of a case of a woman of 27 who has suffered for two or three years with a hypophyseal tumor which has caused acromegaly. Her hands increased gradually in size. At the time of her marriage her wedding ring was No. 8, whereas she now wears a No. 13. The size of her shoes has been changed from 5½ to 8; her frontal bones are very prominent; her nose has changed; the rows of front teeth do not meet, on account of the changes in the size of the jaws. She has complained of slight headache; there have been no eye symptoms; but she suffers from rheumatic and neuralgic pains all over her body. A radiogram shows excavation of the bone which makes the diagnosis of hypophyseal tumor certain. The patient has not consented to an operation as yet.

Dr. William G. Spiller, Philadelphia: After a number of years the bitemporal hemianopsia from tumor of the pituitary body may diminish, as in a case reported by F. A. Packard about 1890 in the *American Journal of the Medical Sciences.* Some years later I obtained the specimen through Dr. Cattell, and found a large tumor filling the third ventricle. It had greatly enlarged the sella turcica, and the relief of pressure on the chiasm afforded in this way had lessened the hemianopsia. Recently, in consultation with Dr. Zentmayer, I examined a similar case in which the bitemporal hemianopsia diminished as other symptoms increased. Tumors in this region are frequently of slow growth. In the last case referred to the symptoms began many years before death. The patient was a woman over 40, and one of the earliest symptoms was cessation of menstruation occurring about the age of 20; other signs, such as bitemporal hemianopsia, have since developed. The early cessation of menstruation in this case indicates that the tumor probably has been growing more than twenty years.

Sir James Grant, Ottawa: I recall a case sent to Sir Victor Horsley by Sir Richard Gower, diagnosed as tumor in connection with the spinal cord. Horsley diagnosed it differently, cut down on the tumor, took out a large amount of material between the theca and spinal cord, scraped it out, injected it with bichlorid of mercury, and the individual shortly recovered and went back to his business, entirely restored as regards function of his extremities, and to-day enjoys perfect health. That shows the advances that surgery has made in the treatment of diseases of the spinal cord as well as of the brain.

Dr. Hugh T. Patrick, Chicago: That a central scotoma with this optic atrophy is relatively frequent I did not know. Within a week I have seen a case which bothered me exceedingly, and except for the fact that the patient had a large central scotoma on one side and a small one on the other, I should at once have made a diagnosis of hypophyseal growth; but not knowing that that was a symptom of hypophyseal pressure I was not willing to come to that conclusion, but now I feel certain. I might add that in this case menstruation ceased at 20. I have in mind also another case in which menstruation also ceased at 20, in which there was unilateral optic atrophy. I think we are apt to demand schematic cases when we have classical bitemporal hemianopsia and we are loath to recognize cases of unilateral optic atrophy with irregular fields as mentioned by Dr. Hecht and Dr. Cushing. I think if we keep this in mind we will more frequently make the diagnosis of tumor of the hypophysis and less frequently that of tabes with optic atrophy as the first and as yet only symptom.

Dr. Julius Grinker, Chicago: I recall a case in which optic atrophy was almost complete on one side, while there was temporal hemianopsia on the other. From the history I learned that it began as a bitemporal hemianopsia. The noteworthy feature in this case was the almost total absence of the knee and Achilles jerks. The diagnosis rested between tabes with beginning optic atrophy and tumor of the hypophysis. I decided in favor of tumor, but had no opportunity to verify the diagnosis. Recently I observed another case of tumor of the hypophysis in which bitemporal hemianopsia was pronounced. In addition there were intermittent dull headaches, which had lasted for several months. The temporal halves had been blind for six months. Acromegalic enlargement is only slightly indicated in the face, but on comparing the patient's photograph with one taken several years ago, the difference is not apparent. A radiogram shows distinct enlargement of the sella turcica. In marked contrast with my first case, this patient has normal reflexes.

Dr. D'Orsay Hecht, Chicago: Dr. Cushing's point in reference to the differentiation between tumors of the hypophyseal region and tumors of the gland proper is very well taken. I find in the literature that most writers are prone to refer rather loosely to tumors in the hypophyseal region, without due regard to the site of origin in the gland itself or its neighborhood. Dr. Cushing's remarks relative to optic atrophy are well borne out by Bartels' statistics, which tend to show that 50 per cent. of the cases are primarily optic atrophies. What Dr. Spiller has said with reference to the variation in the visual fields is most pertinent, but I may add that, particularly in the ophthalmologic literature, these variations in the visual fields and the extent of hemianopsia have been noted. In one instance, reported by Bartels, and observed by Erdheim, I think, the fluctuations were explained on the ground of cyst evacuation, which explanation was subsequently confirmed on postmortem. This variability, therefore, should be borne in mind. Dr. Patrick's point with reference to the type of tabes that presents early optic atrophy is well taken, and he is right in saying that in those cases, when other symptoms are conspicuous by their absence, we should be on the lookout for hypophyseal growth. Professor Nonne's citation of a case in point is most interesting and instructive.

THE CLINICAL VALUE OF RADIOGRAPHY OF THE MASTOID REGION *

SAMUEL IGLAUER, B.S., M.D.
CINCINNATI

The difficulties encountered in radiographing the temporal bone are due to its position at the base of the skull, to the thickness of the parts that the Roentgen rays must penetrate, and to the liability of superimposing the shadows of other portions of the skull on the skiagram of the temporal bone. By directing the rays in the anteroposterior (posteroanterior) axis of the skull Kuhne and Plagemann[1, 2] have taken radiograms of the projecting portions of both mastoid processes, and have drawn clinical deductions therefrom. Voss[3] and Winckler[4] have obtained more detailed Roentgen pictures of the temporal bone by directing the rays in the transverse diameter of the skull.

During the past year Dr. S. Lange, radiologist to the Cincinnati Hospital, to whom I am greatly indebted, has been kind enough to undertake the radiography of the mastoid region for me. After some experimentation, at my suggestion, the radiograms were taken in an oblique profile, i. e., the rays coming from the target were made to center just below the parietal eminence on one side of the skull and were directed through the cranium in the direction of the temporal bone on the opposite side of the skull. At this angle the best skiagrams were obtained. In this position Dr. Lange found that the axis of the x-ray diaphragm was tilted upward at an angle of 25 degrees from the base of the skull (Reid's line), and that it was inclined backward 20 degrees, from the vertical plane passing through both external auditory canals. Figure 1 illustrates this double inclination. In a previous paper on this subject[5] I have given further details concerning the technic, and these need not be repeated here.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

[1] Kuhne and Plagemann: Fortschr. a. d. Geb. d. Roentgenstr., Sept. 1, 1908, xii, No. 1.

[2] Plagemann: Verhandl. d. Deutsch. Roentgen-Gesellsch., Sept., 1908, iv.

[3] Vos, O.: Verhandl. d. Deutsch. Otol. Gesellsch., May, 1907, reprint pub. by Gustav Fischer in Jena; also abstr. in Ztschr. f. Ohrenh., July, 1907, liv, 208.

[4] Winckler: Abstr. Ztsch. f. Ohrenh., July, 1907, liv, 209.

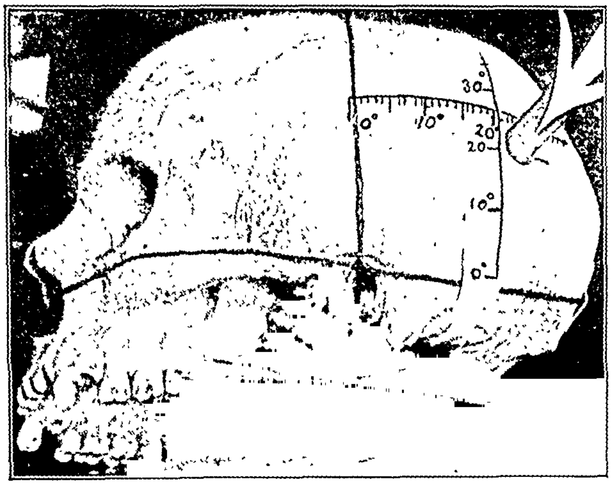

Fig. 1.—The arrow indicates the inclination at which the radiogram should be taken, *i. e.*, the x-ray diaphragm should be tilted backward 20 degrees from the vertical plane, and should be inclined upward 25 degrees from the horizontal plane. (As measured by Dr. S. Lange.)

RADIOGRAPHY OF THE NORMAL MASTOID REGION

In the normal subject; skiagrams obtained by this method delineate the following: (1) The mastoid process with its cells; (2) the position of the external auditory meatus; (3) the line marking the floor of the middle fossa; (4) frequently the position of the groove for the sigmoid sinus.

Many plates in addition show the floor of the posterior fossa, the ascending ramus of the mandible and the suture lines radiating from the asterion. Figures 2 and 3 show all the landmarks above mentioned. From these and similar plates it will be apparent that the internal anatomy of the temporal bone may readily be determined by radiography. Considering the great variability in the structures of this bone, the knowledge so obtained prior to operation will prove of great value to the surgeon.

RADIOGRAPHY OF THE PATHOLOGIC MASTOID REGION

Among the pathologic cases examined were seven cases of chronic otorrhea, one subacute case and four acute cases.

In cases of suppuration of long standing, attended with osteosclerosis and obliteration of the mastoid cells, the dense bone shows very distinctly, and the sigmoid groove very often stands out sharply in the picture. The position of the antrum may be indicated if the overlying bone is not too dense. Seven of the cases which had been radiographed came to operation and the x-ray findings were in a great degree confirmed. It may be interesting to recount these cases somewhat in detail.

RADIOGRAMS CONTROLLED BY OPERATION

Case 1.—L. K., male, aged 21. Diagnosis: Chronic suppurative otitis media on the right (of uncertain duration). X-ray examination showed a dense shadow over the right mastoid region, with the absence of cellular structure. The position of the sinus is indicated. The left normal mastoid region showed an enormously developed pneumatic process. Operation, Aug. 28, 1908, confirmed the findings in the right ear.

Remarks.—In this case it seems likely that the chronic suppuration retarded the development of the right mastoid.

Case 2.—M. S., male, aged 12. Diagnosis: Chronic suppurative otitis media, right and left, of seven years' standing. X-ray examination showed a diploetic mastoid, a high tegmen, and the line marking the position of the sinus. A meatomastoid operation (Nov. 21, 1908) showed the anatomic relations as in the radiogram.

Remarks.—The tip was not disturbed because it appeared normal in the radiogram. In the light of subsequent experience, the radiogram in this case would have indicated that operation might have been deferred.

Case 3.—A. Z., male, aged 55. Diagnosis: Subacute tuberculosis of left middle ear and mastoid. X-ray examination (two plates at different times) of left ear only, showed a very large pneumatic mastoid with hazy outlines of its cells. Radical operation revealed pus and granulations in the middle ear and antrum, and showed serum in the mastoid cells, some of which extended behind the sinus.

Remarks.—Some of these cells might have been overlooked had they not been delineated in the radiogram.

Case 4.—H. N., male, aged 62. Diagnosis: Chronic suppurative otitis media in left ear with caries of the promontory; unhealed radical mastoid in the right ear. Radiogram

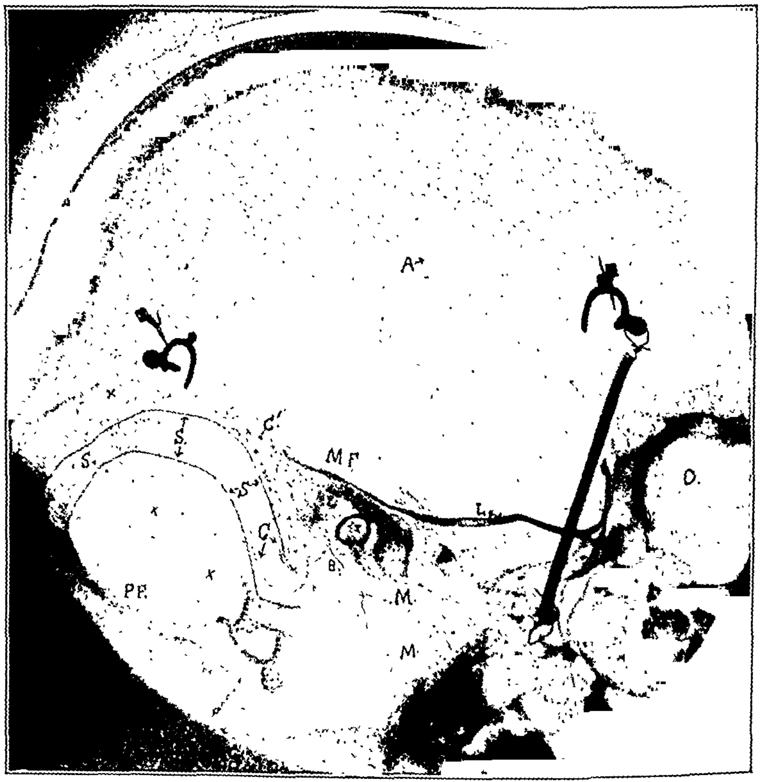

Fig. 2.—Radiogram of mastoid region of a skull: * auditory meatus; M F, middle fossa; L, lead foil in middle fossa; C, large cell at the mastoid tip; C,' smaller cell; S S, sinus (marked by wires); B, jugular bulb; P F, posterior fossa; O, orbit; X X, suture.

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[5] This article will appear in the Annals of tology.

(Fig. 4) of left mastoid region showed dense shadow of osteosclerosis, and a few cells, just indicated, in the antrum region. A small break was noted in the line of the middle fossa and a tentative diagnosis of a defect in the tegmen antri was made. Radiogram of the right ear showed large opening made by a previous operation.

Operation.—Dec. 29, 1908. This revealed a dense sclerosed mastoid, large antrum filled with pus and granulations, and a defect in the tegmen antri with the dura covered with granulation at this point.

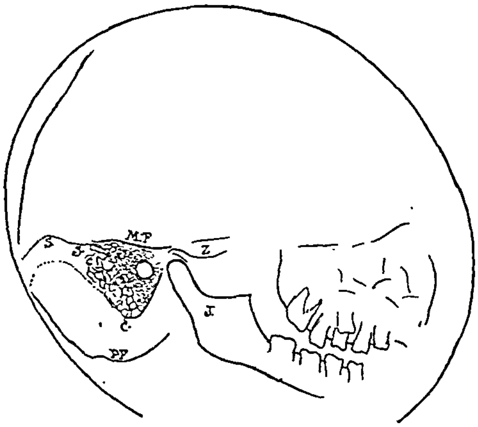

Fig. 3.—Tracing from radiogram. Normal. Mastoid region of a child. M F, middle fossa; C C, mastoid cells; S S, sigmoid sinus; J, jaw; Z, zygoma; P F, posterior fossa.

Subsequent History.—The patient died on the forty-first day after the operation. Postmortem revealed tuberculous lesions in apices of both lungs and a tuberculous caries of the right internal ear and pyramid. The temporal bone, showing defect over the antrum, was removed.

Case 5.—H. B., female, aged 4. Diagnosis: Chronic mastoiditis on the left; right ear normal. *X*-ray examination: An excellent picture of the left side showed a dense shadow of osteosclerosis and clear zone corresponding to the middle ear and antrum, the sinus being sharply outlined (Fig. 5). The right mastoid shows normal diploetic bone and the sinus (Fig. 6). Operation Jan. 11, 1909, showed a small fistula in the external auditory meatus leading into the antrum, which was filled with granulations; the sinus was not uncovered.

Remarks.—There is a striking contrast between the radiograms of the right and left mastoid regions.

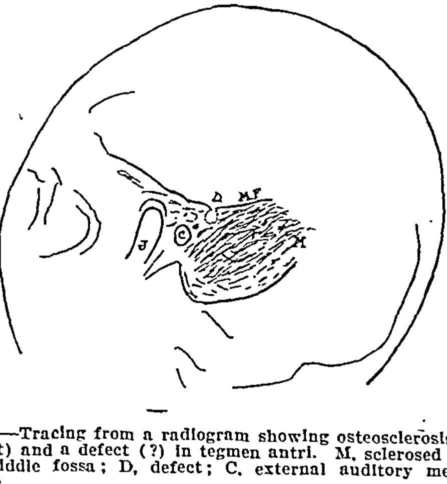

Fig. 4.—Tracing from a radiogram showing osteosclerosis of mastoid (left) and a defect (?) in tegmen antri. M, sclerosed mastoid; M F, middle fossa; D, defect; C, external auditory meatus; J, mandible.

Case 6.—F. M., male, aged 2½. Diagnosis: Acute otitis media with mastoiditis on the left. *X*-ray examination of the right side showed mastoid process of infantile type. The left shows the same in additon to the outlining of the posterior semicircular canal (Fig. 7). Operation Jan. 19, 1909, revealed softened bone about the mastoid antrum.

Remarks.—The outlining of the semicircular canal on the one side and not on the other would indicate that the bone over the canal was softened.

Case 7.—J. R., male, aged 21. Diagnosis: Chronic suppuration in the right and left ear (of years' duration). *X*-ray examination (Fig. 8) of the right ear only (2 pictures) showed osteosclerosis, absence of cells from the tip region and a rather forward lying sinus. The meatomastoid operation (Feb. 3, 1909) uncovered a small deep-seated antrum with a few adjacent cells containing a few drops of pus; the sinus was not uncovered.

Remarks.—The tip of the mastoid was not disturbed, since the skiagram showed that it was not involved.

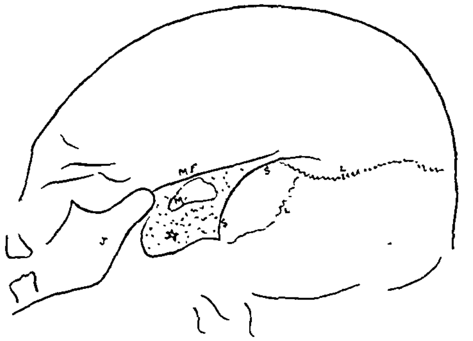

Fig. 5.—Radiogram tracing of left mastoid region, showing osteosclerosis of mastoid process*; M, middle ear; M F, middle fossa; S S, sigmoid groove; L L, suture lines.

In addition to the above, five patients on whom mastoid operation had been performed were radiographed after operation, and the appearance of the operation cavity noted. One of these skiagrams taken several months after a Schwartze operation was especially interesting, since it showed that a number of cells had not been opened, and still the patient had made a perfect recovery.

The number (four) of acute cases examined is too limited to permit of any definite conclusions being drawn. One of these came to operation as already described above. The second case, that of a little girl of 10, simulated mastoiditis. The Roentgen picture of the affected side showed a haziness of the mastoid cells with clear cells on the sound side. The patient recovered without operation, and the radiogram taken six months after recovery showed that the cells had regained their normal contour.

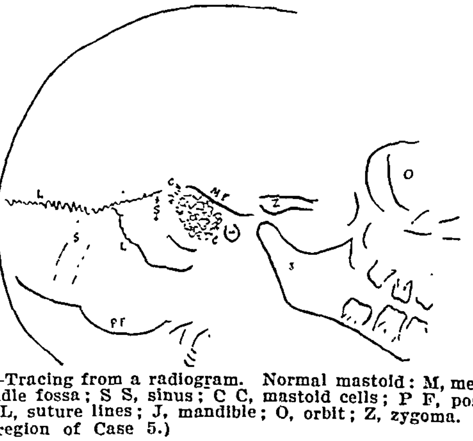

Fig. 6.—Tracing from a radiogram. Normal mastoid: M, meatus; M F, middle fossa; S S, sinus; C C, mastoid cells; P F, posterior fossa; L L, suture lines; J, mandible; O, orbit; Z, zygoma. (Right mastoid region of Case 5.)

The third case of acute otitis media showed similar clouding of the cells on the affected side. These two cases are interesting as confirming the contention of v.

Troelsch[6] and of Politzer,[7] that the mastoid process is involved in most severe cases of acute middle-ear infection. The skiagram in the fourth case, which is too recent for complete description, shows a fistula leading into a large abscess cavity in the mastoid process. It appears probable that repeated x-ray examination in acute cases will give valuable information concerning the progress of the disease.

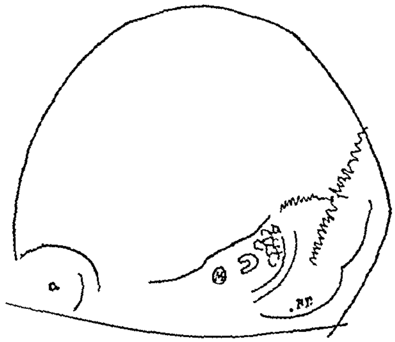

Fig. 7.—Left mastoid region, showing posterior semicircular canal: M, meatus; D, diploetic bone; P F, posterior fossa; O, orbit.

CONCLUSIONS

In conclusion it may be stated:

1. The most satisfactory Roentgen pictures may be obtained in oblique profile of the temporal bone.
2. The internal anatomy of the temporal bone can be determined prior to operation, and the knowledge so obtained is a great aid to the surgeon.
3. Osteosclerosis of the mastoid secondary to chronic suppuration can usually be diagnosticated by radiography.

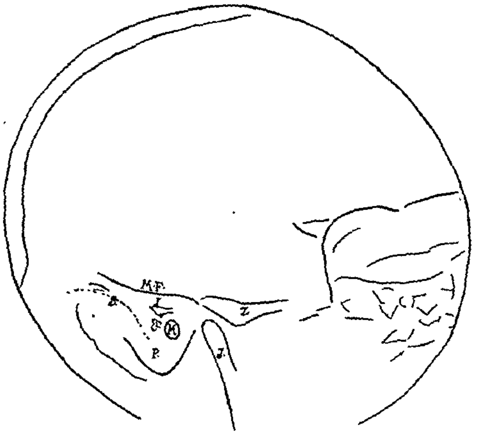

Fig. 8.—Tracing from radiogram: M, meatus; I, antrum (?); M F, middle fossa; P, sclerosed mastoid process; S, sigmoid groove; Z, zygoma; J, ascending ramus of upper jaw.

4. It is likely that defects in the limits of the temporal bone will appear in the radiogram.
5. Cases failing to heal after operation should be controlled by skiagraphy, as this may reveal the seat of the trouble.
6. The value of the Roentgen examination in cases of acute mastoiditis remains to be determined.

22 West Seventh Street.

ABSTRACT OF DISCUSSION

Dr. Sydney Lange, Cincinnati: When Dr. Iglauer first asked me to do some of this work for him it was with misgivings that I undertook it, for I did not believe we could get any practical results, but since starting the work, I believe that with perfected technic this method will form an important link in the chain of symptoms that go to establish the diagnosis of disease in the mastoid bone. The technic is very difficult. It is perhaps as difficult to examine a mastoid in this manner as to examine a frontal sinus and antrum after the method of Drs. Coakley and Caldwell. The whole thing narrows down to this: If the technic is right we have here a method of outlining the anatomy of the mastoid bone. If the tube is just right the anatomy will come out very clearly. The lateral sinus and mastoid cells can be seen very well. From examinations of the cadaver and normal subjects I have never failed to get an outline of the mastoid cells, and in comparing the two sides they have shown close similarity. Reading *x*-ray pictures of the mastoid must be in terms of increased or decreased density, and by comparing the two sides we can draw inferences regarding the pathology of the line. Increased density of one side as compared with the opposite side means sclerosis, decreased density with indistinctness of cell outline means inflammatory softening or necrosis. As in all *x*-ray work, the picture of the mastoid is just one link in the diagnosis and should be regarded as such.

I was very glad to have the subject presented here in order that expert Roentgenologists may take up and further develop the method from this humble beginning.

Dr. R. P. Scholz, St. Louis: Without question radiograms are of great value in diagnosing conditions in and about the temporal bone. I believe that skiagrams of the two sides should be made for comparison. As an aid in outlining the cavities of the temporal bone and of fixing certain landmarks, I would suggest the injection of bismuth, in suspension in peroxid of hydrogen, into the tympanum; having the patient hold his head so as to favor the settling of the mixture to the mastoid. I recommend that this be used as a final examination in patients to undergo shortly the radical operation. If these precautions be taken there need be no fear of bismuth intoxication.

Dr. J. Holinger, Chicago: This demonstration leaves the feeling that we are now more certain and safe in doing mastoid work. A sclerosed mastoid with deep-seated sinus comes out clearly. On the other hand, what we call a dangerous mastoid will show just as clearly. A short time ago we had a discussion in Chicago as to comparison of the mastoid processes of the two sides in the same individual. It was said that both mastoids are usually alike. I differed with that statement then, and do so now, inasmuch as I have often found in operating on both sides that the two mastoids differed markedly in the arrangement of the cells as well as in their size. I think if one mastoid is pneumatic, that is, contains many and large cells, the other one is similar and not likely to consist of one solid mass of bone. But I think the groove of the sinus may be shallow in one side and deep in the other. Large cells may be in one side along the sinus, in the other side they are in the tip of the mastoid, etc., and these are the points that interest us in the operation.

Dr. B. A. Randall, Philadelphia: As in all radiographic work, it takes an expert to translate the picture; with all his knowledge, the aurist himself may be at fault and the results in certain cases may not justify his anticipations. In one case, a large hyperostosis filled the canal and it was impossible to determine clinically where it had its origin. With the picture this was easily seen. Such information may at times be very valuable.

Dr. C. F. Welty, San Francisco: In taking up something new we must demonstrate how and why we are going to be benefited. In these pictures a lesion of the bone will show, but after all, what does that amount to? You have a case in question, a case of acute otitis, for instance; your indications for operative interference are quite well established now and generally accepted by all. If you follow these I do not think it is necessary to have an *x*-ray picture. When it comes to the chronic cases, if we follow the most approved indications for operation we can go ahead with our operative work without fear. As to the sinus encroaching on the wall, if we uncover it with the first blow of the chisel, we must know how to go ahead without getting into the sinus. If the dura is uncovered it is of little consequence. So, after all, while it is a very beautiful thing, I do not see that we profit a great deal by it.

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[6] Troelsch, A. von: Lehrbuch der Ohrenheilkunde, Leipsic, 1881, pp. 291-410.

[7] Politzer, A.: Ohrenheilkunde, 893, p. 417.

Dr. Frank Allport, Chicago: I do not feel that criticism such as that of the preceding speaker should be made without some challenge. We can not say that any progress, anything that sheds light on a case, should be brushed aside as of no use, or not of distinct use. Those of us who have operated on many mastoid bones will, I am sure, feel that we would have been glad if before we operated we had known the internal condition of things. I have many times found conditions that I would like to have known about before operating, and I certainly think it would be unwise to pass up such work and say that it is not of much use. It is unquestionably of great use.

Dr. S. MacCuen Smith, Philadelphia: This past winter Dr. Manges has been doing some of this work. It seems to be of little worth in acute cases, but it certainly is of considerable value in pointing out two features of the greatest interest to the operator—the position of the lateral sinus and the condition of osteosclerosis.

Dr. Samuel Iglauer, Cincinnati: I am very much pleased with the discussion and that Dr. Lange was able to take part in it. This work requires an expert radiographer as well as an otologist and I agree with Dr. Randall that it takes these two to make the diagnosis. It is important to take all the pictures in the same way and at the same angle. The suggestion concerning the injection of bismuth seems to me a good one. I believe Dr. J. Beck of Chicago is employing this method. I have put a piece of lead foil in the meatus and another piece on the tip, and the pieces of metal give two fixed points, which serve as guides in interpreting the radiograms. There is often a difference in the two mastoids, especially if one be diseased. Chronic inflammation in the mastoid retards development on the inflamed side. It is true that we have been able to get along without the *x*-ray, but that is true in general surgical work also. It might as well be said that fractures of the long bones can be treated without *x*-ray pictures. Of course they can; but we know that they can be treated to much better advantage with the aid of the *x*-ray. I am pleased to learn that Dr. Smith's findings correspond with mine, and agree that we can not as yet tell much about the acute cases.

BRONCHOSCOPY AND ESOPHAGOSCOPY

GLEANINGS FROM EXPERIENCE *

CHEVALIER JACKSON, M.D.
PITTSBURG, PA.

One hundred and five deaths, recorded in North America in five years, from foreign bodies in the air and food passages, or from ill-advised efforts at removal, show the necessity of acquainting the general profession with the advances already made and still being made in esophagoscopy and bronchoscopy. Further, I wish to report cases which point out lessons for us all. As evidence of the prevalence of blind groping after foreign bodies, 36 per cent. of the foreign-body cases that have come to me have been in a state decidedly the worse for the unjustifiable, obsolete attempts at removal, which, moreover, had failed to remove the intruder.

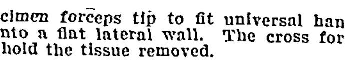
Fig. 1.—Specimen forceps tip to fit universal handle. The side jaw will bite into a flat lateral wall. The cross forms the bottom of a basket to hold the tissue removed.

In one case, seen in consultation, a child of 2 years was dying from acute esophagitis. A penny had lodged in the esophagus five days before. Forceps had been passed blindly, without an esophagoscope. Two days after this utterly unjustifiable procedure, the temperature was 104 degrees, pulse 150. When I saw the patient, five days after operation, the temperature was subnormal, pulse fluttering and uncountable, sloughs were being vomited, and the child was sinking away in the profound shock of a traumatic esophagitis. I concurred in wording the death certificate: "Death from acute esophagitis following the swallowing of a penny." It was really due to the absolute ignorance of the family physician who had never heard of esophagoscopy, and its safety in trained hands.

In another instance a prominent surgeon did a rapidly fatal thoracotomy for a glass bead which at autopsy was found free in the right bronchus. The pathologist who did the autopsy called the surgeon's attention to the fact that in such a case the foreign body could have been readily removed by bronchoscopy. The surgeon said: "What is bronchoscopy?" In that town were two men competent to remove that bead quickly and safely.

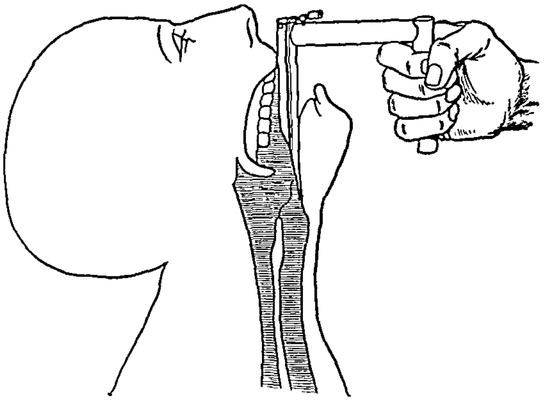
Fig. 2.—Misleading schema of direct laryngoscopy and bronchoscopy.

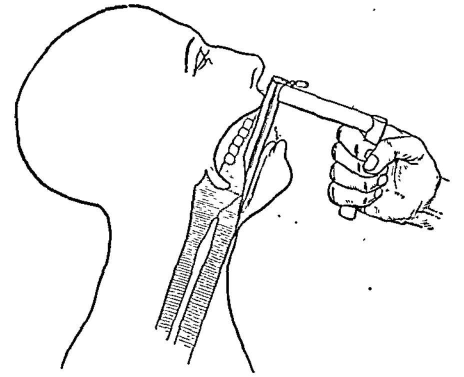
Fig. 3.—Schema showing correct position of patient and of the instrument in relation to the air passages. The instrument should touch the upper teeth very gently if at all.

There were three thoracotomies for bronchoscopically removable foreign bodies reported in 1908. They were published admittedly because the patient survived the operation. It is hoped that no one will misunderstand me. No criticism can attach to thoracotomy for the evacuation of an intrathoracic abscess following the lodgment of a foreign body that bronchoscopic methods have failed to remove. In the three cases mentioned the patients were never examined bronchoscopically, and there was no wait for abscess formation.

I have used the esophagoscope in forty-one cases for foreign bodies in the esophagus, in all but one of which the intruder was removed. In this one case, a child of 2

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

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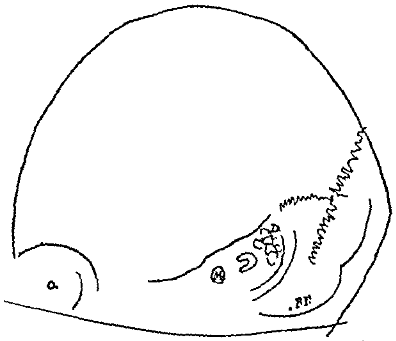

Fig. 7.—Left mastoid region, showing posterior semicircular canal: M, meatus; D, diploetic bone; P F, posterior fossa; O, orbit.

CONCLUSIONS

In conclusion it may be stated:

1. The most satisfactory Roentgen pictures may be obtained in oblique profile of the temporal bone.
2. The internal anatomy of the temporal bone can be determined prior to operation, and the knowledge so obtained is a great aid to the surgeon.
3. Osteosclerosis of the mastoid secondary to chronic suppuration can usually be diagnosticated by radiography.

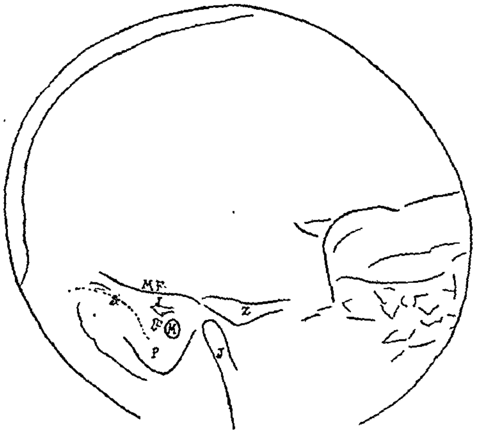

Fig. 8.—Tracing from radiogram: M, meatus; I, antrum (?); M F, middle fossa; P, sclerosed mastoid process; S, sigmoid groove; Z, zygoma; J, ascending ramus of upper jaw.

4. It is likely that defects in the limits of the temporal bone will appear in the radiogram.
5. Cases failing to heal after operation should be controlled by skiagraphy, as this may reveal the seat of the trouble.
6. The value of the Roentgen examination in cases of acute mastoiditis remains to be determined.

22 West Seventh Street.

ABSTRACT OF DISCUSSION

DR. SYDNEY LANGE, Cincinnati: When Dr. Iglauer first asked me to do some of this work for him it was with misgivings that I undertook it, for I did not believe we could get any practical results, but since starting the work, I believe that with perfected technic this method will form an *important link in the chain of symptoms that go to establish* the diagnosis of disease in the mastoid bone. The technic is very difficult. It is perhaps as difficult to examine a mastoid in this manner as to examine a frontal sinus and antrum after the method of Drs. Coakley and Caldwell. The whole thing narrows down to this: If the technic is right we have here a method of outlining the anatomy of the mastoid bone. If the tube is just right the anatomy will come out very clearly. The lateral sinus and mastoid cells can be seen very well. From examinations of the cadaver and normal subjects I have never failed to get an outline of the mastoid cells, and in comparing the two sides they have shown close similarity. Reading *x*-ray pictures of the mastoid must be *in terms of increased or decreased density, and by comparing* the two sides we can draw inferences regarding the pathology of the line. Increased density of one side as compared with the opposite side means sclerosis, decreased density with indistinctness of cell outline means inflammatory softening or necrosis. As in all *x*-ray work, the picture of the mastoid is just one link in the diagnosis and should be regarded as such.

I was very glad to have the subject presented here in order that expert Roentgenologists may take up and further develop the method from this humble beginning.

DR. R. P. SCHOLZ, St. Louis: Without question radiograms are of great value in diagnosing conditions in and about the *temporal bone. I believe that skiagrams of the two sides* should be made for comparison. As an aid in outlining the cavities of the temporal bone and of fixing certain landmarks, I would suggest the injection of bismuth, in suspension in peroxid of hydrogen, into the tympanum; having the patient hold his head so as to favor the settling of the mixture to the mastoid. I recommend that this be used as a final examination in patients to undergo shortly the radical operation. If these precautions be taken there need be no fear of bismuth intoxication.

DR. J. HOLINGER, Chicago: This demonstration leaves the feeling that we are now more certain and safe in doing mastoid work. A sclerosed mastoid with deep-seated sinus comes out clearly. *On the other hand,* what we call a dangerous mastoid will show just as clearly. A short time ago we had a discussion in Chicago as to comparison of the mastoid processes of the two sides in the same individual. It was said that both mastoids are usually alike. I differed with that statement then, and do so now, inasmuch as I have often found in operating on both sides that the two mastoids differed markedly in the arrangement of the cells as well as in their size. I think if one mastoid is pneumatic, that is, contains many and large cells, the other one is similar and not likely to consist of one solid mass of bone. But I think the groove of the sinus may be shallow in one side and deep in the other. Large cells may be in one side along the sinus, in the other side they are in the tip of the mastoid, etc., and these are the points that interest us in the operation.

DR. B. A. RANDALL, Philadelphia: As in all radiographic work, it takes an expert to translate the picture; with all his knowledge, the aurist himself may be at fault and the results in certain cases may not justify his anticipations. In one case, a large hyperostosis filled the canal and it was impossible to determine clinically where it had its origin. With the picture this was easily seen. Such information may at times be very valuable.

DR. C. F. WELTY, San Francisco: In taking up something new we must demonstrate how and why we are going to be benefited. In these pictures a lesion of the bone will show, but after all, what does that amount to? You have a case in question, *a case of acute otitis, for instance;* your *indications* for operative interference are quite well established now and generally accepted by all. If you follow these I do not think it is necessary to have an *x*-ray picture. When it comes to the chronic cases, if we follow the most approved indications for operation we can go ahead with our operative work without fear. As to the sinus encroaching on the wall, if we uncover it with the first blow of the chisel, we must know how to go ahead without getting into the sinus. If the dura is uncovered it is of little consequence. So, after all, while it is a very beautiful thing, I do not see that we profit a great deal by it.

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[6] Troelsch, A. von: Lehrbuch der Ohrenheilkunde, Leipsic, 1881, pp. 291-410.

[7] Politzer, A.: Ohrenheilkunde, 893, p. 417.

Dr. Frank Allport, Chicago: I do not feel that criticism such as that of the preceding speaker should be made without some challenge. We can not say that any progress, anything that sheds light on a case, should be brushed aside as of no use, or not of distinct use. Those of us who have operated on many mastoid bones will, I am sure, feel that we would have been glad if before we operated we had known the internal condition of things. I have many times found conditions that I would like to have known about before operating, and I certainly think it would be unwise to pass up such work and say that it is not of much use. It is unquestionably of great use.

Dr. S. MacCuen Smith, Philadelphia: This past winter Dr. Manges has been doing some of this work. It seems to be of little worth in acute cases, but it certainly is of considerable value in pointing out two features of the greatest interest to the operator—the position of the lateral sinus and the condition of osteosclerosis.

Dr. Samuel Iglauer, Cincinnati: I am very much pleased with the discussion and that Dr. Lange was able to take part in it. This work requires an expert radiographer as well as an otologist and I agree with Dr. Randall that it takes these two to make the diagnosis. It is important to take all the pictures in the same way and at the same angle. The suggestion concerning the injection of bismuth seems to me a good one. I believe Dr. J. Beck of Chicago is employing this method. I have put a piece of lead foil in the meatus and another piece on the tip, and the pieces of metal give two fixed points, which serve as guides in interpreting the radiograms. There is often a difference in the two mastoids, especially if one be diseased. Chronic inflammation in the mastoid retards development on the inflamed side. It is true that we have been able to get along without the *x*-ray, but that is true in general surgical work also. It might as well be said that fractures of the long bones can be treated without *x*-ray pictures. Of course they can; but we know that they can be treated to much better advantage with the aid of the *x*-ray. I am pleased to learn that Dr. Smith's findings correspond with mine, and agree that we can not as yet tell much about the acute cases.

BRONCHOSCOPY AND ESOPHAGOSCOPY

GLEANINGS FROM EXPERIENCE *

CHEVALIER JACKSON, M.D.
PITTSBURG, PA.

One hundred and five deaths, recorded in North America in five years, from foreign bodies in the air and food passages, or from ill-advised efforts at removal, show the necessity of acquainting the general profession with the advances already made and still being made in esophagoscopy and bronchoscopy. Further, I wish to report cases which point out lessons for us all. As evidence of the prevalence of blind groping after foreign bodies, 36 per cent. of the foreign-body cases that have come to me have been in a state decidedly the worse for the unjustifiable, obsolete attempts at removal, which, moreover, had failed to remove the intruder.

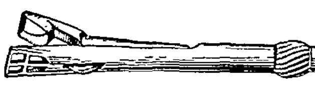

Fig. 1.—Specimen forceps tip to fit universal handle. The side jaw will bite into a flat lateral wall. The cross forms the bottom of a basket to hold the tissue removed.

In one case, seen in consultation, a child of 2 years was dying from acute esophagitis. A penny had lodged in the esophagus five days before. Forceps had been passed blindly, without an esophagoscope. Two days after this utterly unjustifiable procedure, the temperature was 104 degrees, pulse 150. When I saw the patient, five days after operation, the temperature was subnormal, pulse fluttering and uncountable, sloughs were being vomited, and the child was sinking away in the profound shock of a traumatic esophagitis. I concurred in wording the death certificate: "Death from acute esophagitis following the swallowing of a penny." It was really due to the absolute ignorance of the family physician who had never heard of esophagoscopy, and its safety in trained hands.

In another instance a prominent surgeon did a rapidly fatal thoracotomy for a glass bead which at autopsy was found free in the right bronchus. The pathologist who did the autopsy called the surgeon's attention to the fact that in such a case the foreign body could have been readily removed by bronchoscopy. The surgeon said: "What is bronchoscopy?" In that town were two men competent to remove that bead quickly and safely.

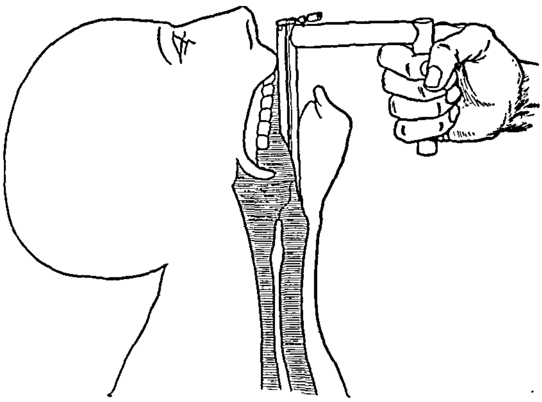

Fig. 2.—Misleading schema of direct laryngoscopy and bronchoscopy.

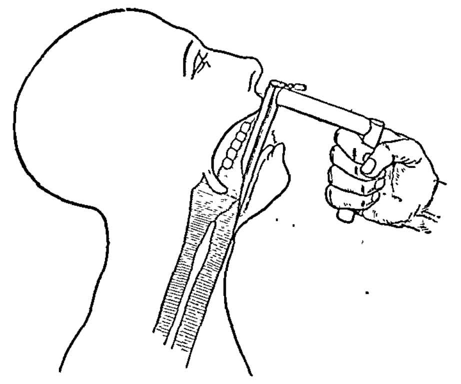

Fig. 3.—Schema showing correct position of patient and of the instrument in relation to the air passages. The instrument should touch the upper teeth very gently if at all.

There were three thoracotomies for bronchoscopically removable foreign bodies reported in 1908. They were published admittedly because the patient survived the operation. It is hoped that no one will misunderstand me. No criticism can attach to thoracotomy for the evacuation of an intrathoracic abscess following the lodgment of a foreign body that bronchoscopic methods have failed to remove. In the three cases mentioned the patients were never examined bronchoscopically, and there was no wait for abscess formation.

I have used the esophagoscope in forty-one cases for foreign bodies in the esophagus, in all but one of which the intruder was removed. In this one case, a child of 2 years had a double-pointed, partially straightened tack, shaped like a fish-hook, in the esophagus. One point had perforated and the other point had almost disappeared. Slight traction on this one point was found ineffective, and strong traction was deemed unsafe; the tack disappeared from the esophagus and wandered into the pleural cavity. The case was fluoroscopically watched by Dr. John W. Boyce. After abscess formation around the tack at the bottom of the pleural cavity, and not until then, Dr. Boyce advised thoracotomy, which was skilfully done by Dr. James McFarlane, who resected a rib, evacuated the pus and removed the tack. The child made a good recovery, and now, six months later, is doing well, though the fistula which communicated with the esophagus is still discharging.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

I have practiced tracheobronchoscopy on thirty-two patients with foreign bodies lodged in the air passages below the glottis. In twenty-eight of these cases the foreign body was removed, not removed in four. There were no deaths from any cause whatever within thirty days, which was as long as the cases were followed.

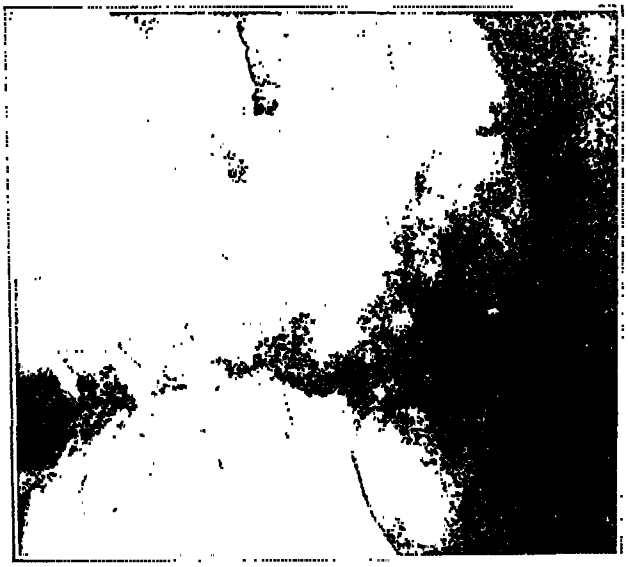


Fig. 4.—Correct position of the cervical spine for esophagoscopy and bronchoscopy. Radiograph by Dr. George C. Johnston.

By this I do not mean that there is no mortality from tube work. I have had two deaths from anesthesia for direct laryngoscopy. One patient, a child, died in convulsions three hours after the removal of papillomata from the larynx. Idiosyncrasy to cocain was the cause. The other patient, a man of 46, died about one week after direct laryngoscopy for the removal of a laryngeal neoplasm. There was a gangrenous bronchitis due to delayed chloroform poisoning. He had an old bronchial history. Anesthesia was impossible, and the anesthetic was abandoned, the operation being finished without an anesthetic. In neither of these cases was there any instrumentation whatever below the larynx. They were for diseased conditions, not for foreign bodies, and they were the only fatalities in over 300 cases of tube work. They point clearly to the necessity of developing such a great degree of skill that little or no anesthesia is needed. If as much time were spent in acquiring skill in tube work as in golf or billiards, tube work would be about the least dangerous of all surgical procedures.

ANESTHESIA

For esophagoscopy in infants I now do not use any anesthetic, general or local. It is not necessary, if the esophagoscope be very carefully and skilfully passed, and, most important of all, if the patient be held in the Boyce position by a trained assistant. In adults, the relaxation of a general anesthetic is advantageous, though not absolutely necessary, except in a few conditions. Foreign bodies in the esophagus are just as apt to cause dyspnea as those in the trachea.

In direct laryngoscopy the lessening of the cough reflex is usually necessary for careful work under direct inspection. The blades of the forceps must never be closed unless their closure is carefully guided by the eye. This necessitates a lessening, or, in some instances, the total abolition of the cough reflex. In children the sparing administration of chloroform is safer than the local use of cocain in most cases, though, of course, the bronchoscope must be instantaneously introduced into the trachea and kept there, if there is any respiratory difficulty. The bronchoscope is a better breathing channel than a tracheal wound. Oxygen and amyl nitrite can be administered directly through the tube, in any idiosyncratic chloroform intoxication. Respiration is more often arrested in the endoscopic removal of foreign bodies from the esophagus than in tracheo-bronchial cases, though laryngeally lodged cases are worse in this respect than any of the others.

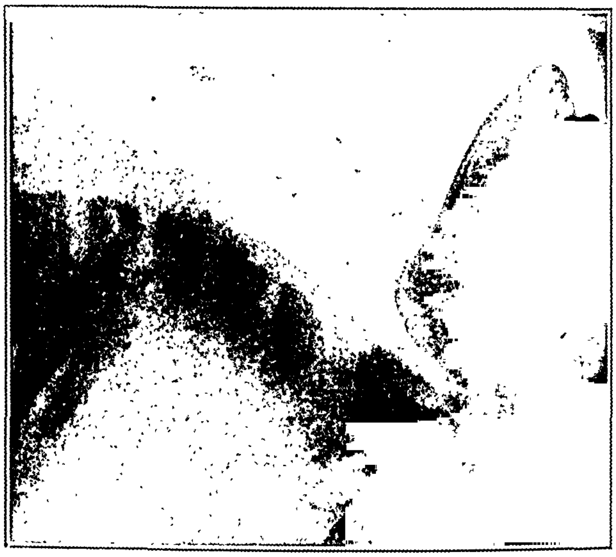


Fig. 5.—Curved position of the cervical spine in the Roser position, rendering esophagoscopy and bronchoscopy difficult or impossible. The devious course of the pharynx, larynx and trachea are plainly visible. Radiograph by Dr. George C. Johnston.

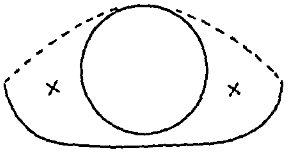
INSTRUMENTS

I have reduced my tubal armamentarium to four tubes and two slide speculums. It is impracticable to have one tube for adults and children, or the same tube for the esophagus and the bronchi. This means one bronchoscope for adults and one for children; one esophagoscope for adults and one for children. A good working set would be the following:

1 bronchoscope, 5 mm. by 30 cm. for children.
1 bronchoscope 7 mm. by 40 cm. for adults.
1 esophagoscope 10 mm. by 53 cm. for adults.
1 esophagoscope 7 mm. by 45 cm. for children.
1 adults' slide speculum.
1 childs' slide speculum.
1 aspirator for the esophagoscopes.
1 specimen forceps, long and short (Fig. 1).
1 foreign-body forceps.
3 Coolidge sponge-holders.

1 Sajous cotton-holding laryngeal forceps, for cocainizing the pharynx and upper laryngeal orifice.
1 double bronchoscopic battery.

No practical effort has yet been made to adapt the tallow candle or a kerosene lamp to endoscopy. We are compelled to use electric light of some kind. If the endoscopist is not of a sufficiently mechanical turn of mind to keep his electric lights burning he will not have the greatest success in foreign body work, for it is a question of mechanics from beginning to end. It does not require great brain power or high intellect, but in some cases mechanical ingenuity is taxed to the utmost to get out the foreign body without interfering with breathing and without traumatism to the tissues. If the surgeon is not a mechanical genius he should have a skilled instrument-maker in the operating-room, or, better still, a trained surgical assistant who has the necessary mechanical ability. The simplest, best and safest source of current is a double dry battery; that is, two sets of four cells each. Each set should have two binding posts and a rheostat. I find men working with all kinds of makeshift batteries, the current from which, with only a cell selector for control, jumps up from underillumination to overillumination and burns out the lamps. Dr. Ingalls (who is a leading authority on bronchoscopy) and I concur in the belief that all forms of rheostats devised for adapting commercial circuits to tube work are dangerous when attached to a tube which makes a moist contact with tissues so close to more or less of the course of the vagi.



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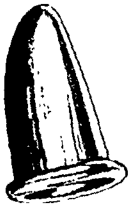

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Fig. 6.—Schema showing relation of the cricoid cartilage (the circle) to the posterior hypopharyngeal wall, in the dorsally decumbent patient, observer looking down the esophagus. The pyriform sinuses are at the position marked X.

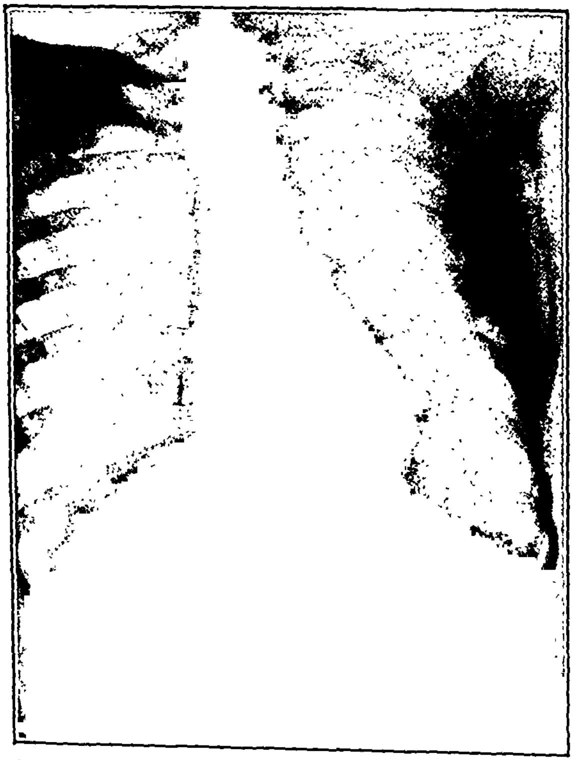
Fig. 7.—Thimble gag or bite block for bronchoscopy and esophagoscopy.

TECHNIC

Direct Laryngoscopy.—The illustration (Fig. 2) is schematically correct, but is very misleading. It shows the head thrown too far back. This is the position into which the patient will throw his head if allowed so to do; but, if he is allowed, a very poor view of the larynx will be obtained, and the trachea will not be in line with the slide speculum. Further, nearly every one infers from this illustration that the upper teeth are used as a fulcrum; the chipping of the enamel from the teeth is evidence of an incorrect position. Nothing could be worse, and it is impossible to get a good view or to pass tubes easily in this position.

Fig. 9.—Tacks removed by bronchoscopy from posterior branch of right inferior lobe bronchus of a woman aged 41 years, referred by Dr. Lewis G. Cole.

Figure 3 gives a more correct idea of the procedure. The head of the patient is drawn forward by the forward pull of the tip of the slide speculum placed on the epiglottis. The hyoid bone and all its attachments as well as the base of the tongue are drawn forward. The axis



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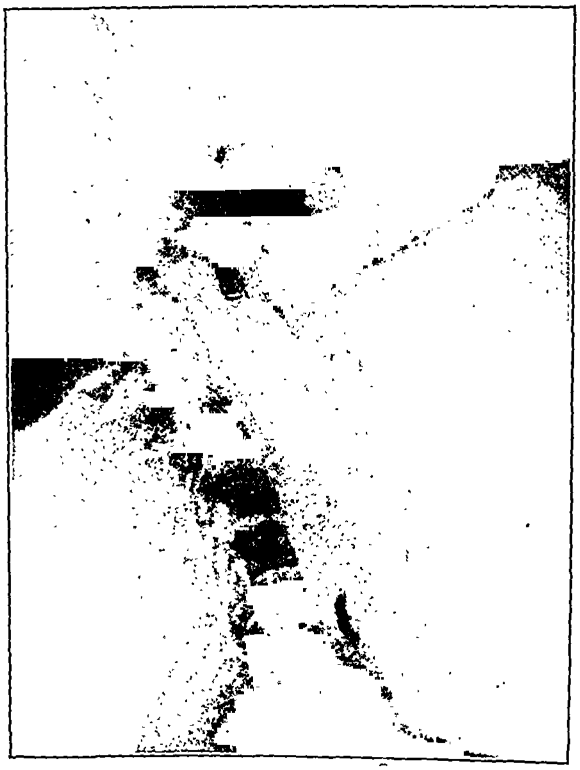

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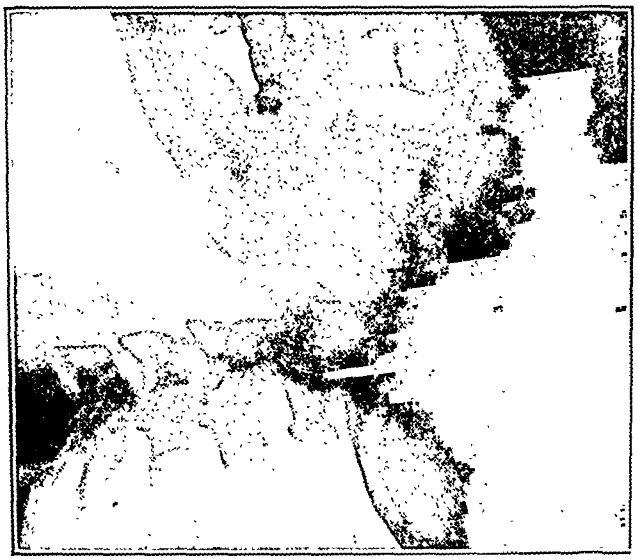

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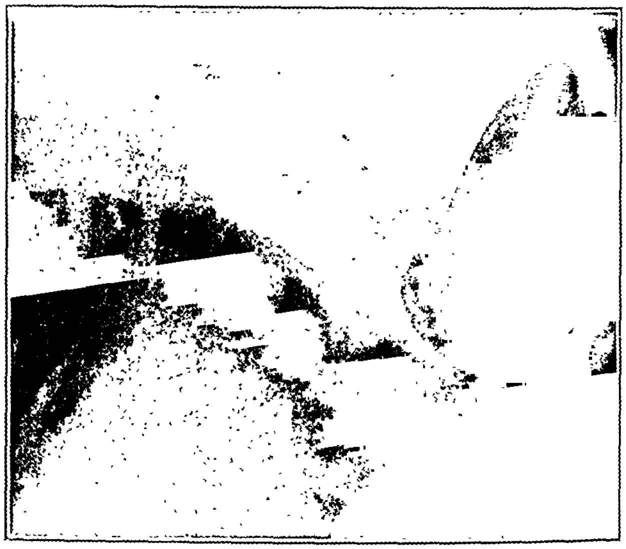

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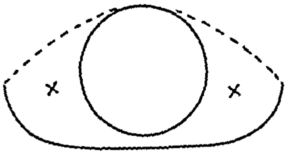

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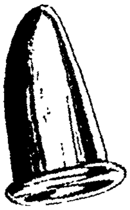

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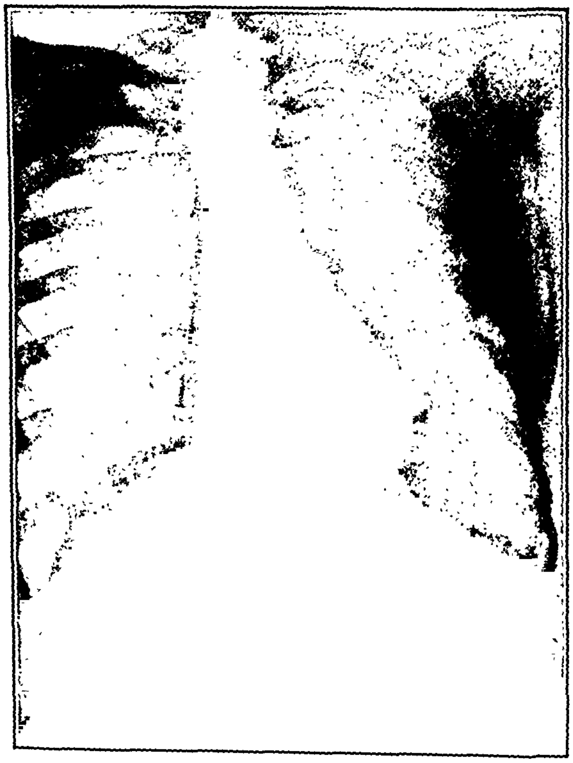

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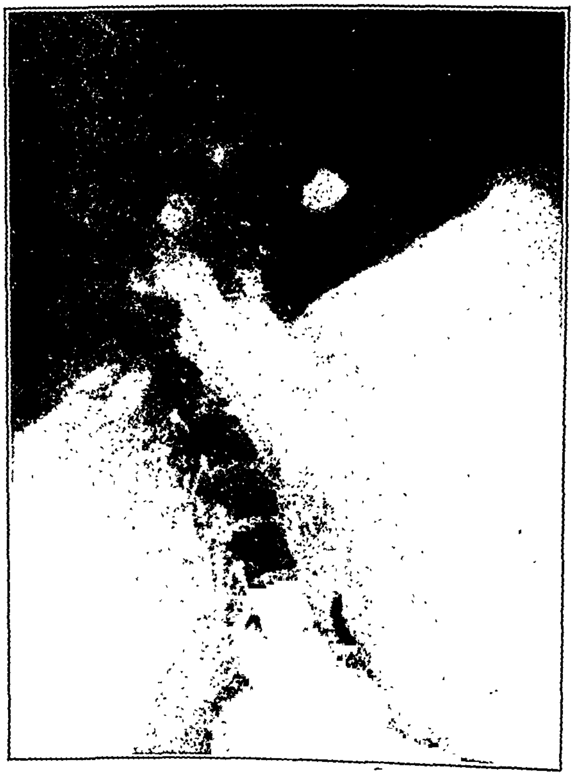

Fig. 10.—Radiograph by Dr. George C. Johnston, showing bone in the esophagus. Note the swelling of the esophageal walls and the clear outline of the air passages.

of the slide speculum corresponds to the axis of the trachea and this axis is not vertical, but leans forward toward the operator, about 20 degrees from the vertical. This exposure of the larynx is the whole art of introducing the bronchoscope. Until it is so mastered that the larynx can be exposed and held exposed to view indefinitely, no one should attempt bronchoscopy.

The foregoing description is of the technic in the upright position. In the dorsally recumbent position, the relation of the parts is the same, but an assistant must be trained to place the parts in the same position by raising the head, at the same time that it is squarely extended on the occipito-atlantal joint, not on the cervical spine. The shoulders slightly overhang the head end of the table, so that the head and neck are free to move under the control of the assistant who holds the head. This position not only brings the air passages in line, but the esophagoscope may be inserted with perfect ease and safety. The effort to use other and unsuited positions like the Roser and the lateral positions have led to accidents, and are especially dangerous in inexperienced hands. I have with the greatest ease slipped a tube down a patient on whom esophagoscopy and bronchoscopy was after trial by others said to be impossible.

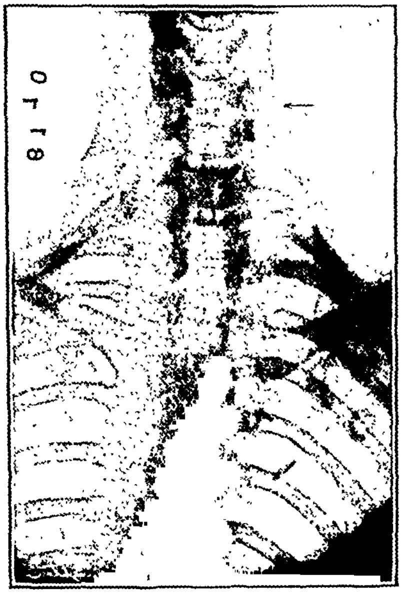

Fig. 11.—Radiograph of same patient. The piece of bone, though present at the level of the dart, does not show. An example of the misleading negative radiograph, and an indication for lateral as well as antero-posterior radiography.

This was in no case due to any superiority in skill, but simply to the head and neck being held in the Boyce position.

Esophagoscopy.—The esophagoscope is pointed as a billiard cue, the operator having a mental picture of the course of esophagus beneath the bared neck. If the head is held in the Boyce position the cervical vertebræ are parallel to [illegible] so that they are (in the recumbent [illegible] orizontal plane (Fig. 4). If the head is held in the dangerous (for this work) position of Roser, the cervical vertebræ are curved (Fig. 5) and the esophagoscope strikes almost vertically on the convexity and can not be introduced into the introitus esophagi. If the attempt be made to pass the esophagoscope in the middle line it encounters at once the cricoid cartilage which is pressing firmly on the posterior hypopharyngeal wall. Very often, too, in the center line the tube mouth will hook over one or both the arytenoids and the voice will be damaged if force be used, but the chief obstruction is the posterior half of the cricoid cartilage. Nearly every one, on meeting this obstruction, uses force; this is a serious and often fatal blunder. If the esophagoscope is inserted in the pyriform sinus the tube will glide down like a pencil in a pocket. The position of the pyriform sinus is on either side of the cricoid cartilage, as shown schematically in Figure 6, which is drawn to show as if the operator were looking down the esophagus of a dorsally decumbent patient. The circle represents the cricoid cartilage resting on the posterior hypopharyngeal wall. The cross shows the pyriform sinuses, one on each side of the median line. These are the normal food passages, but it is through the right one that is most convenient for esophagoscopy.

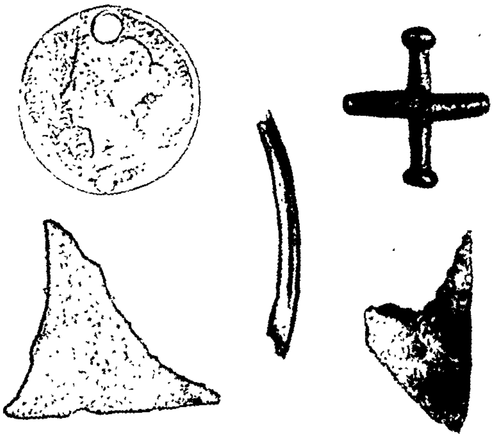

Fig. 12.—Foreign bodies removed from the esophagus by esophagoscopy at the Eye and Ear Hospital, Pittsburg, Pa. Six coins also removed are not shown because illustration of United States coins is forbidden by law.

A gag, properly so-called, should never be used. Some form of bite-block to prevent the patient biting the tube is necessary. The best and simplest is the thimble-gag of Boyce (Fig. 7). The slide speculum requires nothing, as it is of heavy metal that can not be damaged by biting. A widely spread gag may render bronchoscopy and esophagoscopy utterly impossible by jamming the lower jaw down on the hyoid bone.

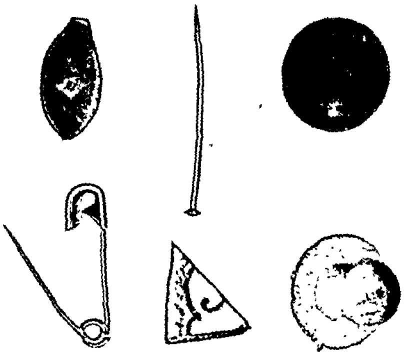

Fig. 13.—Foreign bodies removed from the bronchi by bronchoscopy bloodlessly through the mouth, at the Eye and Ear Hospital, Pittsburg, Pa. In addition 3 coins were removed.

In esophagoscopy for foreign bodies it is always better to introduce the esophagoscope without a mandrin, lest the foreign body should be located high up and be overridden. Every millimeter of the way down must be inspected, beginning with the pyriform sinuses. If even a start be given to the tube before the ocular watch begins, a very large foreign body may be overridden and sometimes the foreign body will crowd the trachea and impede respiration.

Space forbids the illustration of all the radiographs and foreign bodies.

Westinghouse Building.

ABSTRACT OF DISCUSSION

Dr. R. H. Johnston, Baltimore: Nothing was said about direct laryngoscopy in the flexed position. Mosher of Boston, in an article in the *Boston Medical and Surgical Journal* advocates the left lateral position, which is as follows: the patient is placed on the table with the head slightly flexed on the chest; the head is turned to the left until the cheek almost touches the table. The mouth is opened and his special instrument introduced until the epiglottis comes into view when it and the base of the tongue are pulled upward, using the left upper bicuspid teeth as a fulcrum. So far as I know, he has used it only under general anesthesia. Last summer I had a case of papillomata in a child of 4 years and tried in vain to use Mosher's instrument. I flexed the head of the child on the chest, introduced Dr. Jackson's child speculum, pulled the epiglottis and the base of the tongue up, and obtained a splendid view of the larynx. In my next case, a child of 6 years, with dyspnea, I placed the child on the table, had her head, arms and legs held and succeeded in getting a good view of the larynx. In this procedure little force is used, because the tissues in a child's throat yield easily to slight pressure. With the smaller speculum there is no danger of loosening or breaking the incisor teeth. This method in my opinion will prove of more value to most of us than the method in extension. It is very simple and it will be found preferable to the other method. The great trouble I find in extension is that the operator is in a cramped position and the muscles of the neck are so tense that it is difficult to get a clear view. In the few cases in adults in whom laryngeal tumors can not be removed by the extension method, the flexed position again comes into use. An assistant pushes the thyroid cartilage back and brings the anterior part of the larynx into view. I have used this method in a number of cases in the last twelve months in children from 14 months to 6 years and have never failed to get a good view of the larynx. For diagnostic purposes it is ideal and for operative procedures superior to the extension position. In a little child seen some months ago the diagnosis could not be made with the mirror; the patient was placed on the table without anesthesia and the obstruction found to be in the subglottic space. To those who have used extension without success I would recommend this simple procedure.

Dr. B. R. Shurley, Detroit: I would like to make a plea for more extensive digital exploration of the larynx in very young children prior to the use of the bronchoscope. In three cases in which I have had the instrument prepared for further investigation of these regions I have been surprised to find how far down I was able to reach with my finger. Having taken an *x*-ray picture in three instances in which a coin was lodged there the foreign body was located and I was able to dislodge it easily with the finger. The digital exploration of the larynx, if you are blessed with a long index finger, has many advantages.

Dr. R. P. Scholz, St. Louis: I believe that endoscopy is used too seldom; particularly is this true of the esophagoscope. I have observed that the esophagus has little or no pain and pressure sense and that even extremely large foreign bodies, lodged in the esophagus, produced mild or no subjective symptoms. One of my patients scarcely complained, with a piece of hog's vertebræ 2.6x2.8x0.8 centimeters in size, lodged in the esophagus 17 centimeters from the cutting edge of the upper incisors. This patient claimed to have a feeling of pressure over the superior notch of the thyroid cartilage. Dr. Jackson, while in St. Louis recently, told me that his patient, with a plate of artificial teeth in the esophagus, had only very mild if any subjective symptoms. This I believe indicates how readily foreign bodies in the esophagus may go undiscovered. I wish to cite a case which came to my notice while in the Pathological Institute in Vienna. A man, while eating fish, swallowed several bones. Esophagoscopy was performed and three large fish vertebræ were removed. Some time later when signs of mediastinal infection developed, it was attributed to the traumatism produced by the bone removed. The postmortem examination revealed a fourth vertebra lodged about 1 cm. below the lowest point of the esophagus explored. This case illustrates, I believe, how careful one should be to explore the esophagus thoroughly, and not be satisfied with the removal of a foreign body.

Dr. J. R. Fletcher, Chicago: I wish to emphasize the fact that more foreign bodies enter the bronchi than are now suspected. I had the pleasure of visiting Professor Killian's clinic in Freiburg some time ago. He told me that more foreign bodies were removed there than in all other parts of Germany together. He attributes this to the alertness of the physicians in the neighborhood. Because it was known that they were doing a great deal of this work patients are sent to them whenever foreign bodies are suspected. He showed me a patient under treatment who six years before had swallowed an upholsterer's tack.

CLINICAL MANIFESTATIONS OF ADENOIDS IN ADULTS *

OTIS ORENDORFF, M.D.
CANON CITY, COLO.

When we think of adenoids, a picture appears of a childish face, devoid of expression, dull eyes, thick lips and open mouth. This familiar face is so constantly before us that we almost recognize the listless type across the street. We are liable, however, to fail to recognize the disease when it occurs in a well-developed, apparently healthy adult, of age anywhere up to 50, giving a history like this: Catarrh was present during childhood, accompanied by the well-known symptoms of nasal obstruction. Perhaps there was also an attack of scarlet fever with a prolonged recovery. With the change from adolescence to maturity the symptoms of obstruction gradually lessened and troubles of a different type were noticed, for which the patient now seeks relief.

In order to make the clinical course clear I will diverge into the pathology. The reason that these patients frequently date the disease to an old severe attack of scarlet fever or measles is that bacterial invasions have more effect in enlarging and causing hypertrophy in the lymphoid structures of children than in adults. Again, the fauces and nares rapidly enlarge as the child grows older; hence the same amount of tissue would cause less and less obstruction and yet would retain its power of doing other damage. One would naturally suppose that the size of the vegetations would diminish as the individual advanced in life; this is probably true in nearly all cases.

Inspection in these patients shows the usual highly arched palate with the "adenoid fringe," or its remnants and the fauces and pharynx covered with a slimy sticky mucus. There is an enlargement of the lingual papillæ and there are nodules on the posterior wall—"granular pharyngitis." In my limited experience I have never encountered a case that did not exhibit this nodular condition on inspection high up on the posterior wall, and I have begun to believe that it will always be found as a complication in all adenoid patients over 15. The tonsils are usually sclerotic, burnt embers of the spent fires of the repeated attacks of acute or the slow destruction of chronic inflammation. The epipharyngeal mirror or the examining finger reveals the disease to be of a more fibrous nature than in children, having lost to a degree the fish-worm character and being more in furrows and folds which run in an anterior and posterior direction. Somehow the real size is deceptive and there is always more of the tissue than would appear to be from examination.

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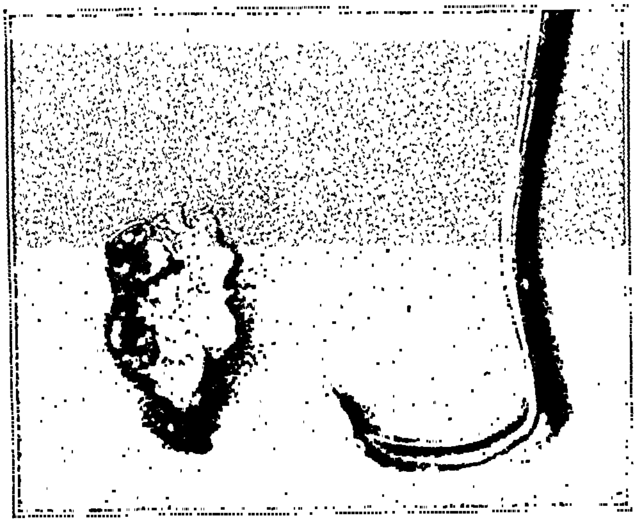
* Read before the Fremont County Medical Society, July 26, 1909.

These patients are apt to be dismissed in clinics with sprays and gargles, and in private practice with sprays and atomizers and other forms of what should be called "office suggestion." After a course of such treatment, patience ceases to be a virtue and the sufferer prefers to continue his unpleasant existence as it is rather than submit to the experiments which experience has taught him are of no avail.

In an average practice there should be four or five well-defined cases in a year.

The case from which this photograph was taken is one of the most instructive ones that I have recorded and it is presented as illustrating a type and also as a lesson in humility, as the underlying pathologic condition was overlooked by several good general physicians and by at least one specialist of reputation. When recognized it was not relieved by the first operation and for no other reason than that it seemed too simple for the exercise of careful technic. The accompanying illustration shows the real size of the specimen, with the old-fashioned curette which I have now discarded.



Second adenoid growth removed. The one removed the day before was fully as large.

Patient.—E., female, aged 38, single, well developed; home in Nebraska, temporary climatic resident of Colorado. (When an eastern physician exhausts his resources the patient is sent to Colorado for climate regardless of what the disease is.) She said that she had a dry mouth, slight deafness, frequent desire to clear the throat, which was not relieved by the almost constant hawking; ears hurt when nose was blown hard. At one time a douche was prescribed which brought on an attack of excruciating pain in ears which have been worse ever since.

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Remarks.—Evidently the tumor was bifurcated and the anterior portion was pushed forward into the posterior nares at the first operation. At the completion the patient at once remarked: "Doctor, you have removed something that has been stopping up my nose for years." She remained three weeks for treatment which consisted of massaging a strong solution of one of the silver salts into the nasopharyngeal membranes with use of the Eustachian catheter every third day.

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SUPPURATIVE ACCESSORY SINUS DISEASES

IN WHICH AN INTRANASAL OPERATION IS INDICATED *

HANAU W. LOEB, A.M., M.D.
Professor of Diseases of the Ear, Nose and Throat in St. Louis University
ST. LOUIS

The great majority of the cases of suppuration of the accessory sinuses of the nose are amenable to intranasal treatment at some period in the course of the disease. Suppuration of the ethmoid labyrinth responds most readily to this form of treatment, with that of the maxillary, sphenoid and frontal, following in the order mentioned. Intranasal treatment may be of no avail in suppuration of any of these cavities, however, if the process has been long-continued, or if the infection is rapid and virulent. Between these two extremes lies the field of intranasal surgery as applied to the suppurative conditions which involve the accessory sinuses of the nose.

The methods by which good results are obtained are various, and for their success depend largely on the personality and equipment of the individual operator; for a method which is satisfactory in the hands of one thoroughly familiar with the technic may be without favorable result in the hands of another who is accustomed to a different plan of operative procedure. Inasmuch as this paper comprehends conditions rather than individual methods, only casual reference will be made to the latter where the discussion requires it.

Besides discussing processes which call for intranasal lessons which anatomy teaches with respect to surgical treatment, however, it will be the endeavor to show the treatment of the accessory sinus through the nose.

To bring this more clearly into view, there are here presented lateral reconstructions of twenty heads, showing forty groups of sinuses with their relations shown to one another and to the floor of the nose, the turbinates, and the external contour of the nose and upper lip. The frontal, sphenoid and maxillary sinuses, and the contour of the nose and upper lip are shown in unbroken lines, the posterior ethmoid in dotted lines, the anterior ethmoid in alternate dots and dashes, the infundibulum in broken lines, and the turbinates in feathered lines.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

This makes it possible to see the exact relations of each factor that is brought up for consideration. The nasal orifices of the sphenoid and frontal sinuses are indicated in black dots. The method employed in reconstruction has already been fully described in previous papers on the subject.

MAXILLARY SINUS

An intranasal operation ordinarily suffices for the relief of simple, uncomplicated suppuration of the maxilliary sinus, provided there is no dental cause. Even then, relief may follow the intranasal operation if there is no active process going on in the teeth or alveolus. Furthermore, good results may be obtained by combining with the nasal operation the removal of diseased roots of teeth.

While a simple puncture through the nasoantral wall is often sufficient, as a rule the best results are obtained only when an extensive resection of this wall is made. This naturally requires the removal of a portion of the inferior turbinate, in this way affording ample space for irrigation and drainage. The well-known tendency of all these openings to contract, and, in many instances, to close altogether, further calls for a large opening which would, at least, do no harm.

Considering the variability in the size and shape of the maxillary sinus, it is always important to be sure that the opening is made into the sinus and not into the tissues anterior or inferior to it. If the opening is made too near the anterior extremity of the inferior turbinate, it may escape the sinus altogether; as, for instance, in heads II left, III right, IV right, VII, VIII left, IX, X right, XI left, XII, XV, XVI, XVII, XVIII, XIX, and XX. In these heads the distance between the anterior extremity of the inferior turbinate and that of the maxillary sinus is more than 5 mm. This distance is greatest in VII right, IX, XV left, XVI left, XVII, XVIII, and XX.

In IX the maxillary sinuses are so small that only a careful operator who has anticipated the existing state of affairs would have been successful at the first attempt.

In the main, the inferior turbinate courses along the nasoantral wall in a horizontal direction, but in a number of instances it inclines sharply downward and backward from its anterior attachment. This is particularly well shown in X right, XIV, XVIII and XX, in which it reaches the level of the superior wall of the sinus, or even higher. In only one instance, IX, does the inferior border of the inferior turbinate reach a lower level than the sinus, though in several cases the distance between them is not great: VI left, XII, XVI, and XVII right.

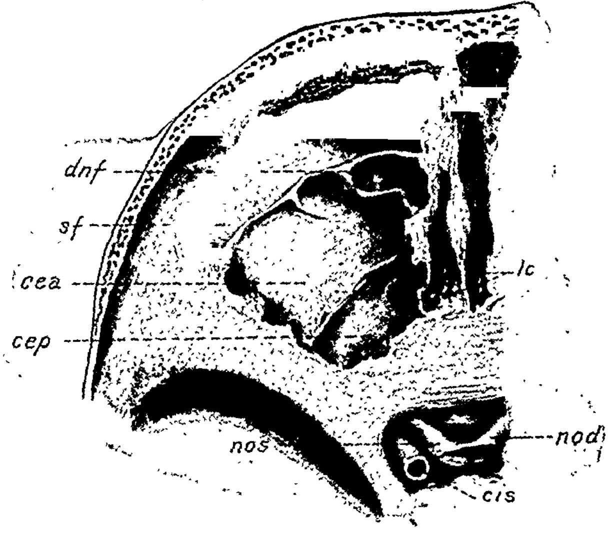
The position of election for opening the sinus, as ascertained by a study of these twenty heads, is just below the attachment of the middle portion of the inferior turbinate. This enters the sinus in every instance, and, in the main, at its most dependent part—at least, so far as possible, by using the inferior turbinate as a guide.

When the inferior turbinate has the great inclination already mentioned and the floor of the nose is widely separated from the turbinate attachment the portion of the nasoantral wall penetrated under this rule will be high above the floor of the sinus, so that it will be advisable to remove the wall below this for quite a considerable distance, easily determinable at the time of operation.

FRONTAL SINUS

In some acute cases, even when associated with ethmoiditis, operation through the nose will afford sufficient drainage and thereby result in cure. Even in the more chronic cases relief follows resection of the adjacent ethmoid cells and irrigation through the nasofrontal canal with or without enlargement. Although claims are made that well-marked cases of frontal sinus suppuration may be relieved by the various intranasal methods, it must be admitted that ordinarily nothing short of an external radical operation suffices.

A study of the reconstructions here presented throws some light on the accessibility of the frontal sinus to nasal operative procedures, and, at the same time, on the anatomic variations which make the operation uncertain, difficult or impossible. These comprehend the distance between the nasal opening of the frontal sinus and the anterior wall of the nose, the presence of an ethmoid cell or nasofrontal canal which reaches a high elevation, and, what can not be shown in these illustrations, septal irregularities, congenital narrowness, or new growths.



XXI

Frontal sinus (sf), anterior ethmoid cell (cea) and posterior ethmoid cell (cep), extending over the roof of the orbit; dnf, nasofrontal duct; lc, cribriform plate, nos, nod, optic nerves; cis, left internal carotid.

In the following a probe would readily enter the frontal opening without any likelihood of entering any other cell with which the frontal might be confused; of course, assuming that the operator understands the technic: I right, III right, IV, V, VI right, VII, VIII, X, XII, XIII right, XVI, XVII, XVIII, XIX right, and XX.

In only twenty-five out of forty instances, therefore, could the probing be accomplished with a reasonable degree of accuracy, and in several of these cases one who is not an expert might be deceived by the entrance of the probe into one of the adjacent ethmoid cells or nasofrontal canal. This can be more or less obviated by making a radiograph which would show how high upward the frontal extends.

In I left, II left, IX, XI, XIII left, XIV, XV, XIX left, an adjacent ethmoid cell reaches so nearly the superior level of the frontal that it would be practically impossible to state whether the probe was in it or of a more fibrous nature than in children, having lost to a degree the fish-worm character and being more in furrows and folds which run in an anterior and posterior direction. Somehow the real size is deceptive and there is always more of the tissue than would appear to be from examination.

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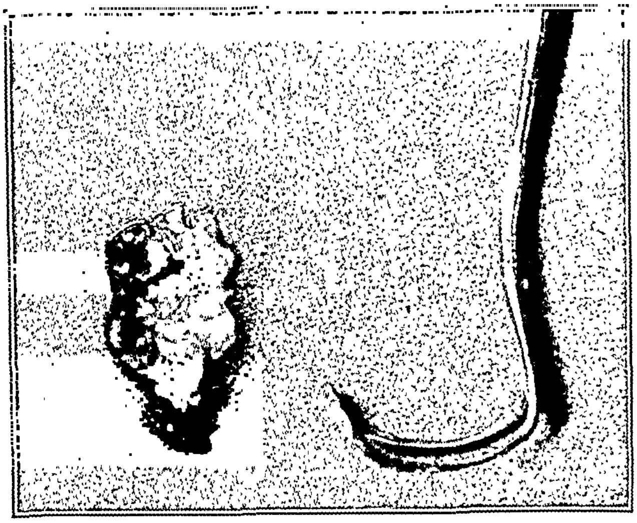
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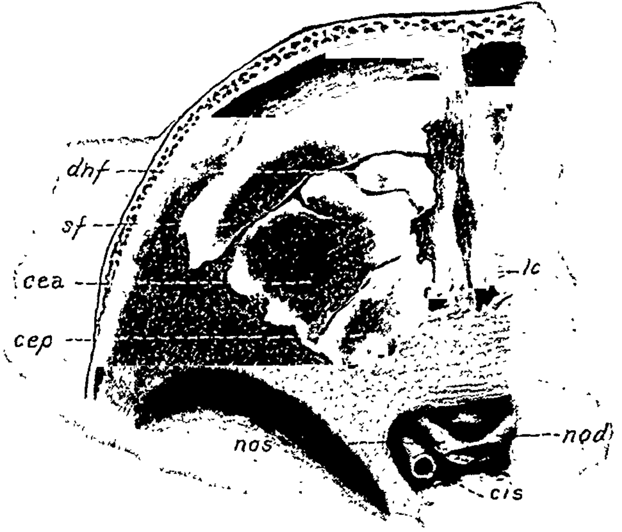
In some acute cases, even when associated with ethmoiditis, operation through the nose will afford sufficient drainage and thereby result in cure. Even in the more chronic cases relief follows resection of the adjacent ethmoid cells and irrigation through the nasofrontal canal with or without enlargement. Although claims are made that well-marked cases of frontal sinus suppuration may be relieved by the various intranasal methods, it must be admitted that ordinarily nothing short of an external radical operation suffices.

A study of the reconstructions here presented throws some light on the accessibility of the frontal sinus to nasal operative procedures, and, at the same time, on the anatomic variations which make the operation uncertain, difficult or impossible. These comprehend the distance between the nasal opening of the frontal sinus and the anterior wall of the nose, the presence of an ethmoid cell or nasofrontal canal which reaches a high elevation, and, what can not be shown in these illustrations, septal irregularities, congenital narrowness, or new growths.



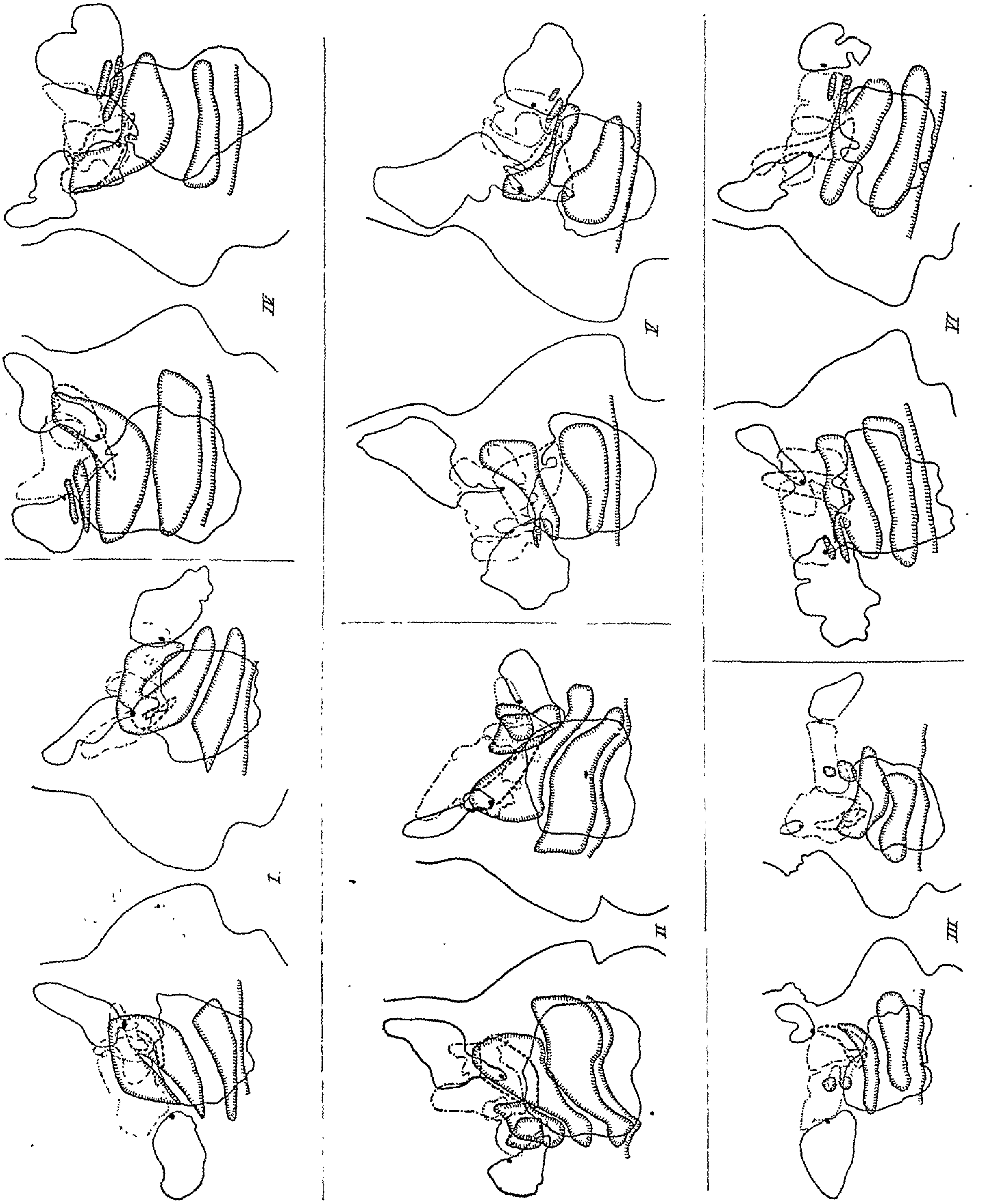
XXI

Frontal sinus (sf), anterior ethmoid cell (cea) and posterior ethmoid cell (cep), extending over the roof of the orbit; dnf, nasofrontal duct; lc, cribriform plate, nos, nod, optic nerves; cis, left internal carotid.

In the following a probe would readily enter the frontal opening without any likelihood of entering any other cell with which the frontal might be confused; of course, assuming that the operator understands the technic: I right, III right, IV, V, VI right, VII, VIII, X, XII, XIII right, XVI, XVII, XVIII, XIX right, and XX.

In only twenty-five out of forty instances, therefore, could the probing be accomplished with a reasonable degree of accuracy, and in several of these cases one who is not an expert might be deceived by the entrance of the probe into one of the adjacent ethmoid cells or nasofrontal canal. This can be more or less obviated by making a radiograph which would show how high upward the frontal extends.

In I left, II left, IX, XI, XIII left, XIV, XV, XIX left, an adjacent ethmoid cell reaches so nearly the superior level of the frontal that it would be practically impossible to state whether the probe was in it or



In these figures, the frontal, sphenoid, maxillary sinuses and thecontour of the nose and upper lip are indicated by unbroken lines, the posterior ethmoid by dotted lines, the anterior ethmoid by alternate dots and dashes, the infundibulum by broken lines and the turbinates by feathered lines.

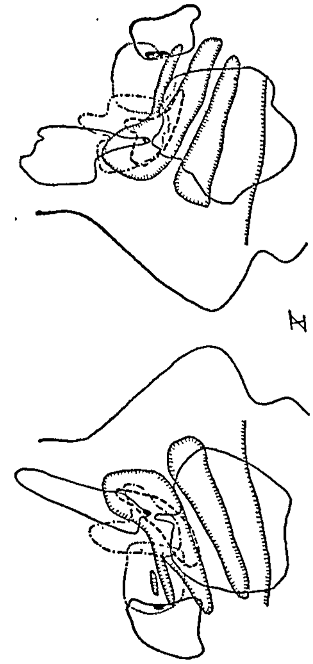
in the frontal, and in II right and VI left the nasofrontal canal occupies a similar relation. It is thus evident that there must be some doubt in almost half the cases as to whether the frontal sinus is being treated when intranasal operative measures are directed toward relief of frontal sinus suppuration. It must be admitted, however, that a careful study of properly taken radiographs will reduce this possibility of error considerably, but this involves lateral as well as anterior views, perhaps with probe *in situ*.

The intranasal operation has, therefore, a limited field of service, and is subject to much likelihood of error. There is, however, this saving clause—that, even if the operation is directed toward an adjacent cell, so much bone and other tissues will be removed that drainage from the frontal is promoted and the condition is relieved.

We do not anticipate a good result in those cases in which the frontal extends over the orbit and is affected in this portion.

ETHMOID CELLS

Ethmoid suppuration, when uncomplicated, practically always responds to intranasal treatment, for the entire ethmoid labyrinth may be exenterated by operation through the nose. The most anterior cells can not, sometimes, be freely opened and curetted on account of their nearness to the nasal bone. Hajek asserts, however, that it can always be done if the middle turbinate has been properly resected. There are occasionally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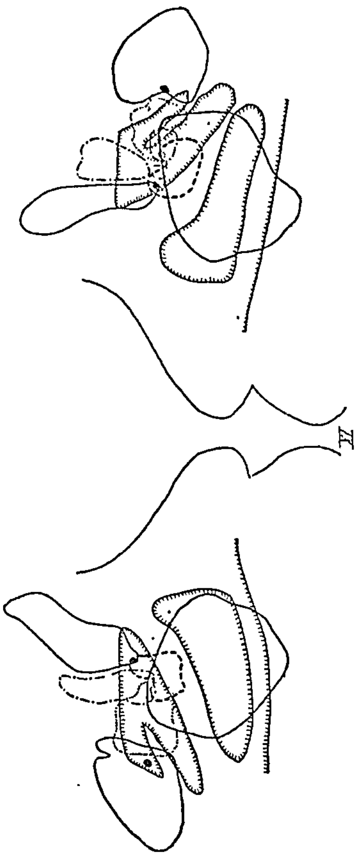
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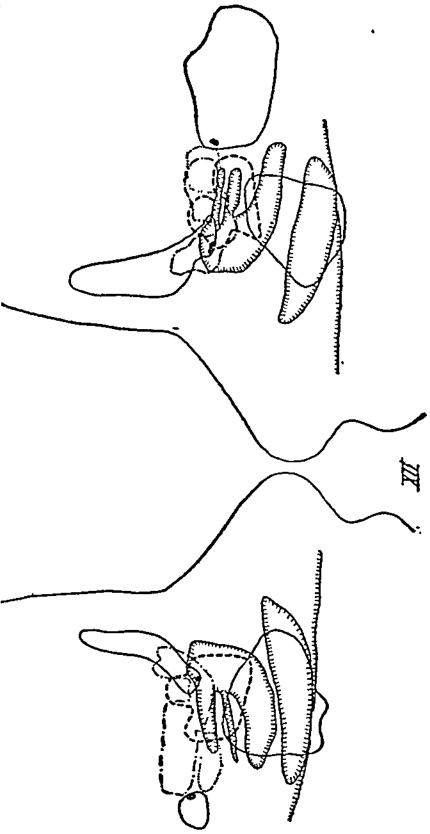
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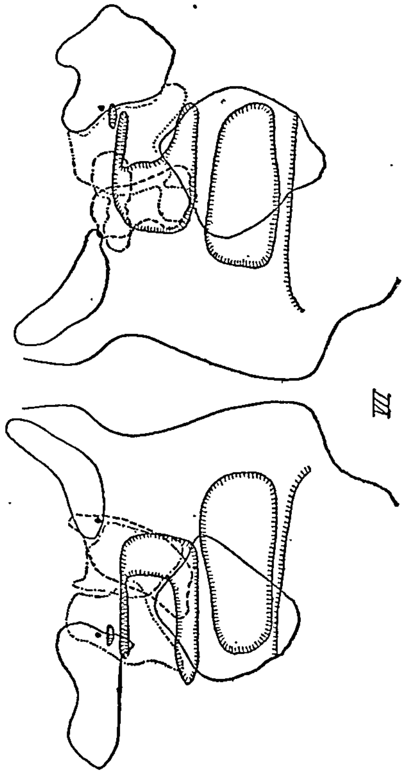
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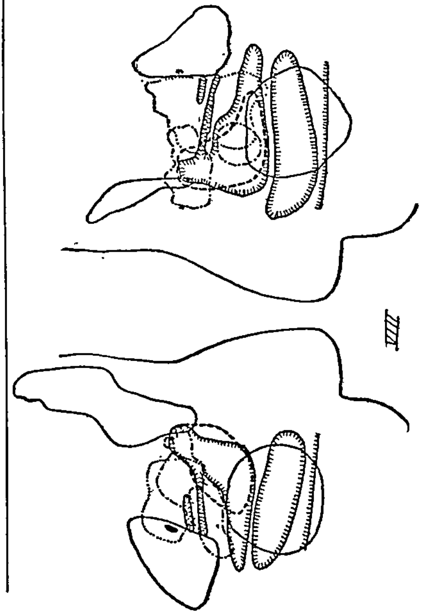
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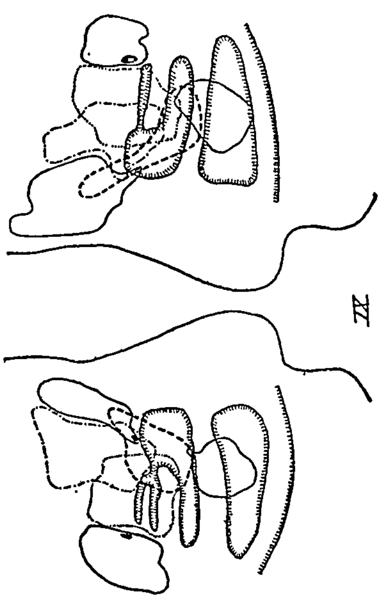
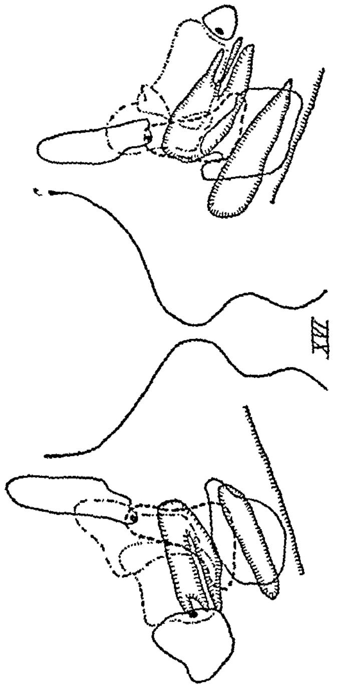

XV

anomalies of development of the ethmoid cells, which render the operation either difficult or unavailing. For instance, in XXI, it will be seen how both the anterior and the posterior ethmoidal cells extend, in this particular case, over the roof of the orbit. In this position the cells could not be properly exenterated through the nose and would probably escape observation in a radical frontal operation.

Of course, there is always some danger in working in the dark, as it were, and the process may be most marked in the most inaccessible portion of the cells, which extend farthest from the seat of operation. Yet, it must be said that, as in all suppurative conditions, drainage does a great deal toward affording relief, and the operative field being in the most dependent portion of the cells, drainage is apt to be secured.

The truth of Hajek's contention—that if the middle turbinate is resected the most anterior of the ethmoid cells may be exenterated—is borne out by the figures. In only nine instances—I, III left, VII, VIII left, XIV left, XV left, XVIII right—does an ethmoid cell extend as far forward as the anterior extremity of the middle turbinate; and in most of these instances the distance is insignificant, certainly not sufficient to inter-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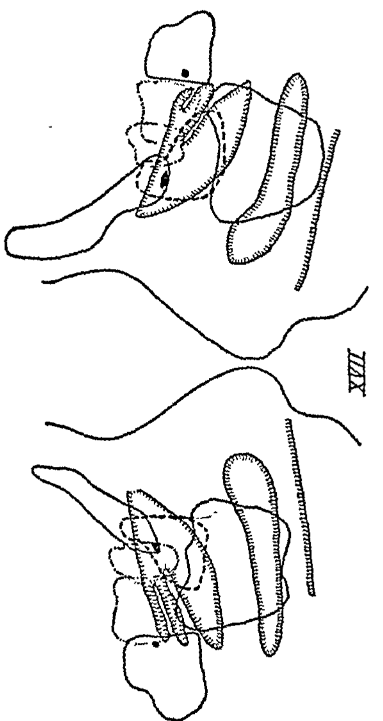
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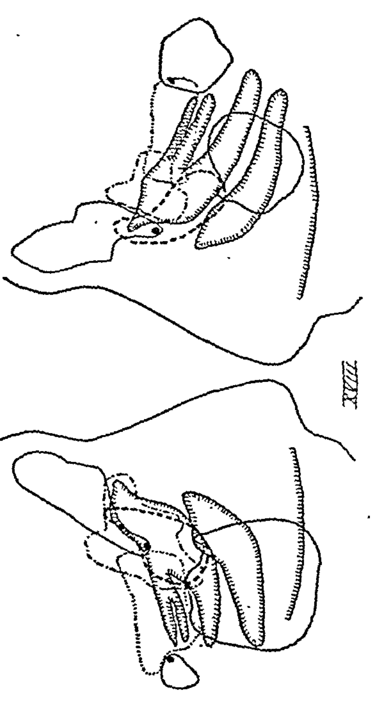
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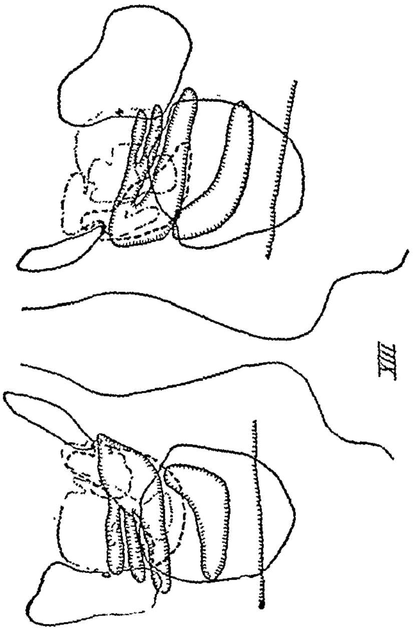
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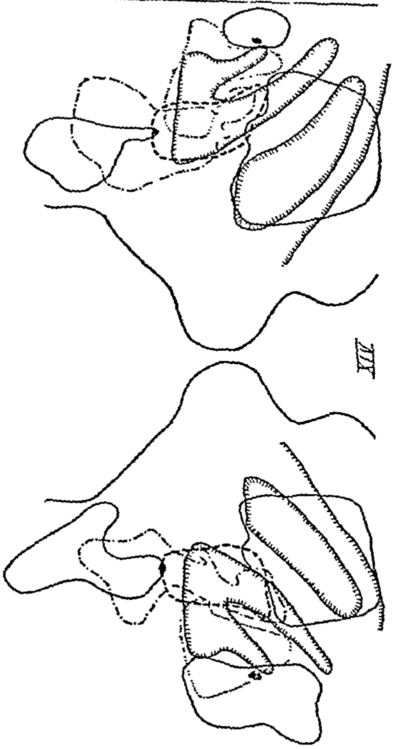
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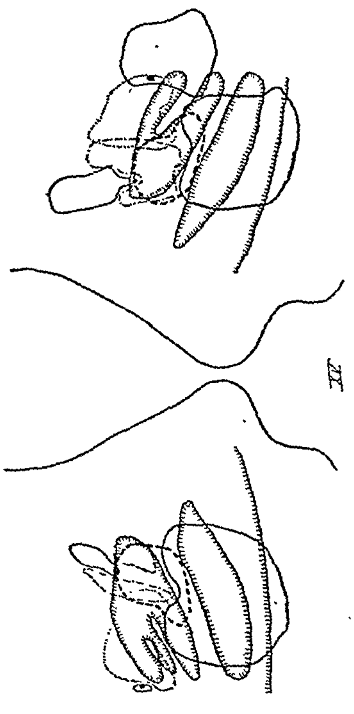

XV

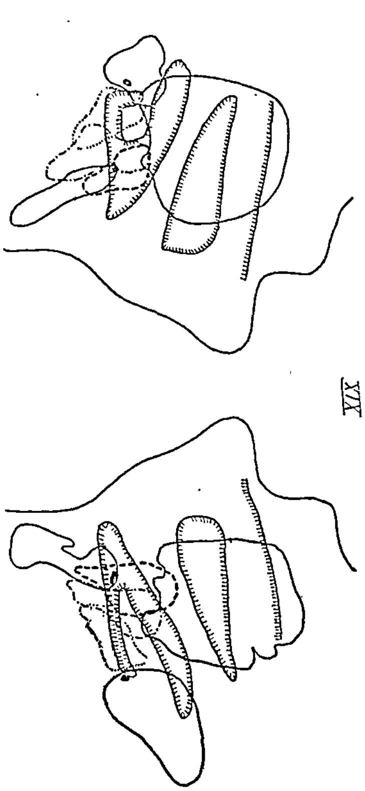
fere with the operation. The cells extend upward considerably in most of the heads, more than 10 mm. above the superior attachment of the turbinate in I left, II, III, V, VI, VII, IX, XI, XIII, XIV, XV, XVI, XIX and XX. This distance is very considerable in I left, II, III left, VI, XIII left, XIV, XV left, XVI and XX. In I left an ethmoid cell extends upward anterior to the frontal for a distance of 17 mm., while in IX right an ethmoid lying immediately behind the frontal reaches a higher level than the frontal.

These facts are important only in that they show how high up the ethmoid cells extend, thereby accounting for the recurrence of the polypi even after the floor of the cells has been removed; they emphasize the importance of thorough exenteration of the diseased part. It goes without saying that, however radical one may be in this operation, respect must be had for the cranial wall of the sinus.

SPHENOID SINUS

In uncomplicated cases, and those in which the ethmoid alone is involved with the sphenoid, the nasal route is the only one to be advocated. There is a growing disposition, even among those who formerly thought that the external operation was always to be advised, to rely more on the intranasal method.

The nasal operation can be of service only by the curettement and the improved drainage occasioned by the enlargement of the nasal opening. Whether this be



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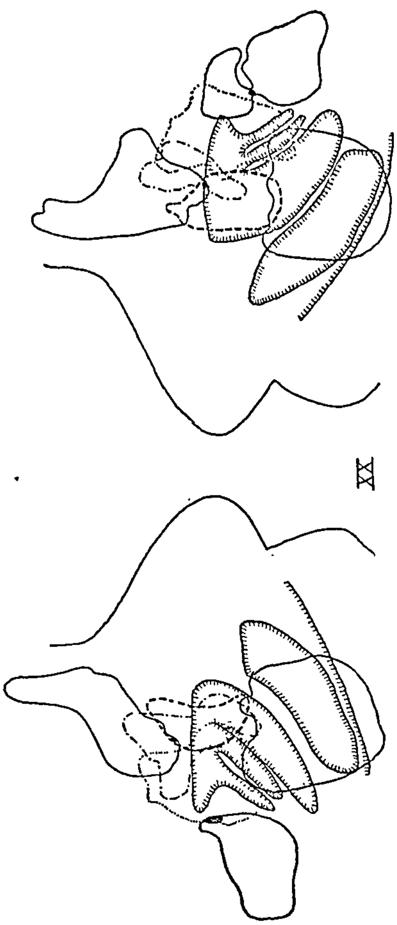

XX

confined to the pars nasalis, or, as Hajek suggested, made to include the pars ethmoidalis, the endeavor is the same.

The location of the nasal opening of the sphenoid is such that in any suppurative process affecting it there is a quantity of pus more or less constantly present. Practically all the sphenoids here shown have the opening so far from the floor that this must be quite general. In most comparison will show that even extensive resection of the anterior wall will fail to reach the floor. The drainage which results from this operation, however, provided the opening be permanent, will generally be followed by disappearance of the pus.

The distances between the sphenoid orifice and the tip of the nose and the anterior border of the middle turbinate are given in the table:

DISTANCE FROM SPHENOID ORIFICE

	Anterior Tip of Nose.		Anterior Border of Middle Turbinate.	
No.	Right.	Left.	Right.	Left.
I	77	77	36	31
II	77	74	43	38
III	64	69	33	39
IV	75	72	35	33
V	72	74	30	31
VI	75	80	37	44
VII	88	93	37	39
VIII	69	72	29	38
IX	70	71	37	32
X	72	70	36	33
XI	88	89	37	33
XII	91	88	41	34
XIII	77	77	38	35
XIV	84	82	39	34
XV	86	79	41	31
XVI	71	71	30	35
XVII	77	77	41	39
XVIII	80	80	50	40
XIX	77	77	42	36
XX	87	92	37	40

For the first, the variations are from 64 to 93, the usual (leaving out the five shortest and longest) from 71 to 88, the average 78.

In regard to the distance between the orifice and the anterior border of the middle turbinate, the variations are from 29 to 50, the usual (leaving out the shortest and longest five) from 31 to 41, the average 37. This gives a fair idea of the length of the probe and operative instrument required.

In a previous paper I called attention to the greater likelihood of optic nerve involvement, in cases in which the nerve lies near the level of the orifice, for this would signify that the pus would be separated from the optic nerve by a thin bony wall only, instead of the air, which would intervene if the opening was at a lower level. Whether this relation can be ascertained by radiographic study is still to be determined, with fair prospects of success. At any rate, sphenoid suppuration with only the slightest suspicious eye symptoms calls for immediate operation.

I wish, again, to call attention to an observation made before this body two years ago, with reference to the four heads reconstructed up to that time, that in cases in which the middle turbinate has an inclination downward and backward the floor of the sphenoid lies at a lower level than the ethmoid, or at its level. Compare I, II, V, VI, X, XI, XII left, XIV, XV left, XVII, XVIII left, XIX and XX. It will be noted that this is confirmed in every instance, except XV right, in which the sphenoid is only a little pit 2 by 4 by 2 mm.—and the left sphenoid, which occupies the space usually given over to the right, follows the rule. A glance at XV, right, shows that, even though the sphenoid be small, it lies considerably nearer the level of the floor than that of the roof of the ethmoid.

In the other instances in which the middle turbinates run horizontally backward the floor of the sphenoid lies above that of the ethmoid. The exact value which this will have will depend on the further confirmation of the observation and on the subsequent development of its utility.

Humboldt Building.

Ligation of the Jugular in Sinus Phlebitis.—R. Botey of Barcelona says that he will present a communication on this subject at the International Medical Congress, and the *Archives Internat. de Laryngologie*, August, has, rather prematurely, published it. He states that he has encountered 8 cases of thrombophlebitis of the lateral sinus in the course of 404 mastoid operations, and that the 4 patients who survived the phlebitis had not had the jugular ligated, while this was done in the 4 other cases. He used to ligate as a matter of course, but his own experience and review of the literature have convinced him that in most cases ligation is useless at best, and is liable to do actual harm. He advocates curetting the sinus in case of otitic thrombosis, without the Gerhardt sign, curetting from the knee to the bulb, without ligating the jugular. When the jugular is manifestly affected, and can be felt as a hard cord, it should be opened, ligated over the clavicle and resected. Pulsation in the sinus is not a sign of phlebitis, he adds, but is merely a transmitted pulsation from the brain tissue.

ACUTE INFLAMMATIONS OF THE ACCESSORY SINUSES, SYMPTOMS, DIAGNOSIS AND TREATMENT *

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PHILADELPHIA

From a general standpoint, acute inflammations of the accessory cavities may be considered as primary and secondary. An inflammatory process involving the mucous membrane of the nasal cavity is the most frequent cause of acute sinus disease. Irregularities as to contour of the nasal cavity, not only interfering with the drainage of the nasal cavity, but also directing the current of mucous toward the opening of the sinus, is a common causal factor. These same pathologic conditions would by directing the current of air toward the opening of the sinus tend to carry infectious material into these cavities. This is especially true of the frontal, ethmoid and sphenoid sinuses. The narrow, poorly developed nostril, which frequently is seen as a result of postnasal obstruction in childhood (especially from adenoid vegetations), is often a cause of acute sinus involvement, owing to the fact of the abnormal arrangement of the intranasal structures, interfering with the normal opening into the accessory cavities both as to size and situation, and also interfering with the size and development of the cavity. Such irregularly formed nostrils and intranasal structures would naturally predispose the individual to inflammations of the nasal mucous membrane, which in turn would predispose to sinus involvement and infection, such lesion, however, being secondary to the primary nasal involvement.

Primary involvement of the nasal accessory cavities is a very rare condition. It may, however, be brought about by injury, or contiguity of tissue in which the nose was not primarily involved. In some cases in which the cavity is apparently primarily involved, if a careful history is obtained it will be found that previously to the existing attack there had been some inflammatory condition in the nasal cavity, with slight involvement of the accessory cavity. The nasal irritation having cleared up, yet the cavity was left susceptible, and later an exacerbation may be mistaken for a primary involvement. An important pathologic subdivision of the acute inflammatory processes of the accessory cavities is simple acute inflammation without infection and acute inflammation with infection. However, in acute catarrhal inflammation, unless it clears up in from twenty-four to forty-eight hours, on account of the constant presence of bacteria in the secretions, the simple catarrhal inflammation will become an infective one, so that from the standpoint of treatment they can be considered under the same heading, the difference being one of degree and severity rather than variety.

Occupation is an important predisposing factor, when the individual is subjected to irritating dust, vapors, or fumes.

Irregularities and abnormalities in the formation of the accessory cavities, the antrum, etc., may explain many of the peculiar and unique cases often reported. It has been shown by sections of the skull, with a view to demonstration of the relation of the accessory cavities to the nasal chamber, and to each other, that almost any size or shape of cavity or thickness of bone is possible, the antrum cavities varying in size from a little larger than a pea to three times the usual size, and extending under the floor of the nose.

With the possible exception of the maxillary sinus, inflammation of any of the other accessory sinuses may be attended with curious mental phenomena, these phenomena depending entirely on the severity of the inflammation, and whether or not there is any existing systemic lesion.

Too much importance can not be attached to the relation of these cavities to headache and neuralgia, and curious eye [illegible]. [illegible] the duty of the rhinologist and of [illegible] to look carefully into the history of the patient as to whether there was any previous history or associated history of epidemic influenza, and whether there is any pathologic alteration of these accessory cavities. It has been my experience that many cases of curious and ill-defined neuralgia about the head and face have been entirely cured when attention has been directed toward the accessory cavities.

Physiologically, the accessory cavities are practically closed cavities, and while the mucous membrane lining is somewhat similar to that of the mucous membrane of the upper respiratory tract, yet the glandular elements and the terminal nerve filaments are not so numerous as in the respiratory mucous membrane. The epithelial layer is also much thinner and the submucosa not so resistant on account of the deficient blood supply.

It is a well-known fact that the obstructive lesion which interferes with the ventilation and drainage of the frontal, anterior ethmoidal, and maxillary sinuses is usually not located in the sinuses, or even in their ostia, but is in the hiatus semilunaris and infundibulum, or in the structures in their immediate vicinity. Any cavity lined with mucous membrane is predisposed to infection and inflammation when its drainage and ventilation are impaired, and therefore any anatomic or pathologic condition which causes obstruction to the flow of the secretions from the infundibulum, via the hiatus semilunaris, will predispose the mucous membrane lining the sinuses draining into it to infection and inflammation. It is obvious that if the obstruction to the drainage and ventilation is removed, the predisposition to infection and inflammation will disappear.

The nasal obstruction may be produced by many conditions: The nasal septum is frequently deviated toward the lateral wall of the nose in the region of the anterior half of the middle turbinated body, often crowding the middle turbinal against the outer wall of the nose, thus obstructing the drainage and ventilation of the frontal, anterior ethmoidal and maxillary sinuses. The middle turbinated body is frequently enlarged by edema, hyperplasia, or by the presence of accessory ethmoidal cells in its body, and may in consequence block the hiatus semilunaris; or the middle turbinal may cling closely to the outer wall of the nose as to block the hiatus. The bulla ethmoidalis is located immediately above the hiatus, and when enlarged it may overhang and completely obstruct it. The lip of the uncinate process, or median wall of the infundibulum, may be the seat of accessory pneumatic cells which may obstruct the infundibulum. New growths, spurs on the septum, and congestion of the mucous membrane due to underlying systemic conditions, are allegorical important factors.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

The accessory sinuses, even in a simple acute cold, are slightly involved, and after the cold has disappeared a slight latent irritation remains in the cavity and may suddenly light up into a serious acute attack. In all the infectious diseases, with high temperature and necessarily vascular disturbances, nasal congestion occurs and the accessory cavities become acutely congested.

One-half of the arc of the orbit is taken up by the accessory cavities and many eye symptoms are associated with or follow lesions of these cavities. Orbital abscess is secondary to disease of the sinuses, displacement of the globe may be occasioned by encroachment on the orbit by a distended sinus, and blindness may result from an involvement of the chiasm through the roof of the cavity or by an implication of the optic nerve as it passes through its foramen, in the sphenoid, as a consequence of inflammation in the cells within that bone. A general orbital cellulitis may be occasioned by an acute inflammation of any accessory sinus. Edema of the lids is one of the most significant symptoms of disease of the accessory sinuses, the edema usually starting directly over the sinus involved. Paresis, or even paralysis, of one or more of the eye muscles may occur as a consequence of sinusitis.

Inflammatory processes involving the mucous membrane of the sinuses do not differ from those occurring in any other mucous membrane, except that they pass through the various stages with greater rapidity, so that the difference is merely one of degree or intensity. Any infection of the accessory cavities would necessarily be preceded by or associated with some inflammatory process, which process involves the opening of the sinus and thus converts it into a closed cavity, causing retention of the infectious material. This. in turn, intensifies the already existing inflammation and produces rapid changes in the mucous membrane, which if drainage is not established, may lead to total destruction of the membrane and necrosis of the underlying bony structure. If the severity of the inflammatory process is not sufficient to cause destruction of the mucous membrane and denudation of the bony walls of the cavity, a fibroid formation within the basement membrane may take place, or, in other words, the physiologic function is interfered with, resulting in permanent pathologic alteration.

As a rule, a combined acute infectious process within the accessory cavities shows irregular systemic symptoms, unless there is a point where the physiologic wall of the closed cavity has broken down, and rapid general septic infection takes place, when the clinical phenomena are pronounced. In other words, acute involvement of the accessory cavities amounts to a walled-in process, and it is only when necrosis takes place that sytemic infection occurs.

A point of considerable importance in regard to systemic phenomena, as well as local symptoms, is the size and shape of the cavity and the variations in the thickness of its walls. For example, a frontal sinus with thin walls may result in perforation and involvement of the brain cavity. Dural and subdural abscesses frequently follow pathologic changes within the frontal sinus. Again, in the case of the antrum of Highmore, when the superior wall is very thin, there will be marked eye symptoms, while in another case with a thick bony wall the eye symptoms will be entirely absent.

In acute inflammation of the accessory sinuses there is usually a history of exposure to cold, acute coryza, riding in an automobile or railroad train, or of influenza or other infectious disease. The pain is always of the dull, aching or boring character, influenced by position. Tenderness, marked over the sinus region, extends all over the head in the beginning, usually bone tenderness; the pain and tenderness are increased by percussion. Swelling, not always a prominent symptom, may or may not be present, and is irregular in extent. The patient has a curious symptom referable to the eyes. He states that when he tries to read and looks up, the eye on the side of the sinus disease hurts, the muscles seem to be involved in the edema, and there is slight edema of the lids together with ptosis. This enables the physician to tell whether one or both sinuses are involved. There is tenderness at the inner angle of the eye on pressure, more marked in frontal sinus than in the others.

In acute involvement of the frontal sinus, usually the involvement is accompanied by symptoms of acute coryza with mucopurulent discharge and intense pain over one or both eyes, and at the inner angle of the eyes. The pain is intensified by stooping forward, straining at stool, coughing, or by any sudden movement. The pain is not continuous, and is apt to cease at bed time to begin on awaking with increased intensity, and unless relieved by frequent hot douches and hot applications over the forehead, it becomes intolerable. There is also headache, with a feeling of fullness or constriction in the forehead. The symptoms are aggravated by using the eyes for reading.

In inflammation of any accessory cavity there is always "bone soreness," and the pain on pressure is not limited to nerve points. Various tender spots pointed out by certain authors are often misleading, owing to the fact of frequent irregularity in the size and formation of cavities. This is especially true of frontal and ethmoidal cavities. Irregularity of eye symptoms would at once suggest irregularity in these two cavities.

From a standpoint of diagnosis, the use of the *x*-ray can not be overestimated. It shows the extent of the involvement, the relation of structures, and the formation of the cavity, so that irregularities can be quickly recognized and predisposing anatomic factors easily discerned. Transillumination, unfortunately, is nothing more than an adjunct. In my experience it has been misleading as often as it has been useful, and should never be depended on in itself. However, in association with the clinical history, the careful examination of the nasal cavity, the thorough observation of the patient, and also a careful study of the *x*-ray picture, transillumination may aid in the diagnosis and treatment.

In my previous writings on this subject, I have urged the conservative method of dealing with these conditions, and by persistently and carefully shrinking the tissues about the orifice of the accessory cavity, have been able, in the majority of cases, to open the cavity by the natural orifice; in other words, to reverse the pathologic process. The cavity, which is an open cavity, has been converted into a closed one. By what process? Simply by inflammation with its accompanying swelling of the surrounding structure as well as the orifice. Certainly, then, by shrinking these tissues at the right point, drainage by the natural orifice can be obtained.

In making the application to these points, the contour of the intranasal structures must be carefully observed; otherwise, the application will not be made at the right point. This, I think, will explain the failure in many individual cases to secure drainage by the natural opening, and necessitate an unnecessary radical procedure. In my clinic at Jefferson Medical College Hospital, where from 10,000 to 12,000 treatments are made yearly, and also in my private practice, where many of these acute inflammatory involvements of the accessory cavities are observed, this plan has been successfully carried out for a number of years with such satisfactory results that radical interference has been practically eliminated in acute cases. In fact, in the last year, in only two cases, and they were of the chronic variety, was the radical operation necessary. Even in the chronic cases, unless there is bony necrosis, the same plan of treatment will give equally good results.

Since, in the majority of cases, the primary lesion is intranasal, the treatment, then, should be directed toward cutting short the inflammatory attack, reducing the swelling in the nasal mucous membrane, especially about the orifices of the opening of the sinuses, so as to allow free drainage of the accessory cavity. Once the normal opening is established it is remarkable how quickly an inflammatory lesion of the accessory cavity will clear up. The 2 to 4 per cent. solution of cocain is sufficiently strong to insure the proper amount of shrinkage of the inflamed and swollen tissue. Personally, I do not use the suprarenal extract, because in my hands I have observed that in many cases in which I have used this solution the after-irritation is so marked that it overcomes largely the beneficial results due to cocain. For this reason, I have ceased to use it. As stated before, it is essential to study carefully the individual case in order to locate the exact position of the orifice and its relation to the intranasal structure. For example, I have seen cases involving the maxillary sinus, in which it was said that it was impossible to open the natural orifice, in which the middle turbinate was of the scroll variety, and the solution had been applied on the outside of the turbinate and never underneath this body. With a little care and minute pledgets of cotton the mucous membrane underneath the scroll turbinate was shrunken and in a very short space of time the pus began trickling from the blocked up cavity. By keeping the membrane shrunken down, free drainage was established and without any surgical interference with the antrum, a permanent cure was effected.

This paper has to deal with the acute processes, and in an acute process necrosis would not occur. To be sure, if bony necrosis has occurred within any of the cavities, nothing short of opening that cavity and removing the necrosed tissue would effect a cure, but such cases must not be confused with acute inflammations, neither must cases that have become subacute or chronic, and are largely latent when lighted up by some acute process, be termed acute. This, I think, will account for many cases of disagreement as to diagnosis and treatment, whether or not it is actually an acute process, or whether there is some left-over inflammation which has been lighted up by some infection or nasal inclination. Illustrating this, a severe acute case was treated by this conservative method.

Patient.—A young man, aged 22, a medical student, was admitted to the hospital suffering with acute inflammation of the left frontal sinus. He had a temperature of 103 F., marked tenderness and swelling over the left frontal sinus, marked edema of the upper and lower lids, with considerable redness and discoloration. He was suffering from severe boring frontal headache, and the pain extended into the temporal region. He was restless and apprehensive. Two days before, following a slight cold, suddenly the symptoms of the sinus involvement began. The day before admission he had a decided chill, and these symptoms rapidly increased until he presented himself at the hospital as described above.

Treatment.—The application of a 2 per cent. solution of cocain was made at once to the swollen mucous membrane in the nasal cavity, and gradually carried up to the region of the frontal sinus opening. At the same time the general condition was treated by thorough cleansing of the intestinal tract by means of calomel and a saline purge. The application of cocain was continued until carried to the orifice of the sinus. In this particular case this was rather difficult, as the sinus opened rather high and posteriorly, and the superior portion of the nostril was narrow and obstructed. This was overcome, however, by making a short, sharp curve at the end of the applicator, and in this way carrying the cotton into the nasopharynx and bringing it forward and upward, it was possible to reach the opening. In less than two hours there was a free flow of pus from the frontal sinus. Heat was also applied externally and the resident physician was instructed to make the application at the first sign of blocking up of the sinus. In exactly three days all swelling and pain had disappeared.

Remarks.—At first examination the patient's condition was such that it seemed almost inevitable that the frontal sinus would have to be opened externally. This was obviated by the careful and faithful carrying out of the method of drainage by the natural orifice.

In 1898, I reported some cases in which apparently there was an acute involvement of the antrum, with all the symptoms pointing to such an acute inflammation, in which it was clearly proved afterward that the entire condition was produced by the accumulation of gas in the antral cavity. By directing the treatment to the orifice of this cavity the accumulated gas was allowed to escape and the symptoms rapidly disappeared. Since reporting those cases, I have observed the condition rather frequently, not only in my private practice, but in the out-patient department at the hospital.

From a general pathologic standpoint it should be remembered that the accessory cavities are truly such, and that they are not independent cavities. That they are accessory cavities to what? To the nasal respiratory tract. Hence, the origin of many pathologic lesions is the nasal cavity. It must be remembered also, that these accessory cavities are dependent on adjacent structures for nutrition. Also, when infected, the rhinologist is dealing with a closed cavity, but not a cavity of new formation, hence the pathologic alteration is not subject to the same law as that of a cavity of new formation.

I do not mean that never are we to perform the radical operation, but I wish to call attention to the fact that many patients who are subjected to the radical operation could and should be cured without any such procedure.

In general, then, the treatment should be directed to the cause and the removal of any interference with the natural drainage. Swelling of the nasal mucous membrane may be reduced by cocain or any solution that will shrink the mucous membrane; douching with warm alkaline solutions to favor drainage; measures directed toward the relief of the pain. Rarely, it may be necessary to wash out the cavity through the natural opening, an enlargement of this opening, or through exploratory puncture. If free drainage is not maintained the condition is likely to become chronic.

Value of Playgrounds.—The twentieth century has caught the real meaning of the unsurpassed Grecian classical education; and modern cities in spending millions for playgrounds are repeating history and we are entering the new educational renaissance.—J. E. Peaus, in *Hygiene and Physical Education.*

DISEASED CONDITIONS INVOLVING ACCESSORY SINUSES IN WHICH EXTERNAL OPERATION IS INDICATED *

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A discussion of the choice of operative measures necessary to relieve or to cure any pathologic condition in the body frequently has to take into account many factors other than those directly connected with the disease in question. Nowhere, perhaps, is this so marked as it is in discussing the advisability of treating diseases of the nasal accessory sinuses by intranasal surgery or by an external operation.

Rhinologists at present are at considerable variance, and personally I find myself, as the result of wider experience, changing my views considerably from year to year as to the desirability of resorting to an intranasal or an external operation for the relief or cure in any given case of sinus disease.

External surgical operations undertaken for the cure of disease of the frontal, ethmoid and sphenoid sinuses require a thorough knowledge of the anatomy of this region, acquired not only from the many excellent monographs on this subject, but also from an extensive practical experience resulting from numerous dissections. The operator should also have had a thorough training in general surgical technic and have acquired skill and reasonable rapidity in operating before attempting these long major operations. The proximity of the brain and the great variety in the size, shape and relation of these cavities to the cranium renders unskilled work on the part of the operator likely to be followed by serious consequences to the patient.

In all but the very acute cases complicated by cellulitis, when an immediate external operation is indicated, before deciding on recommending to the patient the intranasal or external operative route, a complete examination should be made. This includes:

First.—The determination of the number of sinuses involved.

Second.—Having a skiagraph made which, if good, will show the size and shape of the frontals and the number of septa within them; the width of the ethmoidal area and the approximate size of the sphenoids.

Third.—The general condition of the patient. In chronic sinus disease, the presence of marked disease of the arteries, heart, lungs or kidneys makes the external operation far more serious and frequently undesirable.

Fourth.—Determine, if possible, whether the disease is acute or chronic. In very few acute cases, not complicated by the external manifestations described later, does the condition require an external operation.

Fifth.—If acute, decide whether the history points to a simple acute inflammation of a previously healthy sinus or to an acute exacerbation of a chronically diseased sinus. In the latter case it is wiser to defer the external operation until the acute symptoms have subsided.

Sixth.—The severity of the symptoms, more especially of headache and its effect on the patients. I have not yet been able to determine why some patients suffer so much more from sinus disease than others. There is nothing in either the character or amount of discharge to help us, nor even in the size of the sinuses as shown by the skiagraph. As a rule, those with very large sinuses suffer more than those with small sinuses, but I have seen many exceptions to this rule. If intranasal operations fail to give the desired relief, then an external operation is indicated.

Seventh.—The ultimate result of the treatment of chronic sinus disease should be carefully explained to the patient by his physician. Intranasal methods relieve and may cure. The cavities remain and may again become infected. External operations remove all the diseased membrane, obliterate the cavities and result in a permanent cure. There is a scar and frequently some deformity in a portion of the anatomy where it is easily seen by the patient, and this fact alone often deters some individuals from submitting to the external operation.

Eighth.—As intranasal treatment necessitates frequent operations at short intervals, many who can ill spare the time for such treatment prefer the more thorough and less time-consuming external operation.

Ninth.—The neurasthenic patient who is prostrated each time any intranasal operation is attempted and rarely submits to enough being done to make much headway against the disease should be urgently advised to submit to the external operation.

Tenth.—Very narrow nasal chambers add greatly to the difficulty of intranasal operations, and to such patients with chronic suppuration of the frontal, ethmoid and sphenoid, we recommend the external operation.

CONDITIONS REQUIRING THE EXTERNAL OPERATION

When considering the diseased conditions in the various sinuses requiring external operation, it would seem best to divide them into an acute and chronic type.

1. *Acute Frontal, Ethmoid and Sphenoid Involvement.*—Whenever acute involvement of these sinuses is accompanied by marked edema of the skin of the forehead, eyelids or side of the nose, exophthalmos, orbital cellulitis, local heat, great local tenderness, with or without a rise in the body temperature, an external operation is imperative and should be done without delay for fear of supervening meningeal or other intracranial complications. On the other hand, it must not be considered that we would invariably advocate external operation for the relief of very slight local edema and swelling without first attempting by intranasal treatment to relieve the condition. It is possible that deflections of the septum, or large bony exostoses, might render it impossible to give adequate intranasal treatment, in which case external surgery must be resorted to. The proportion of acute cases demanding external operation is few as compared to those which can be cured by intranasal treatment.

2. *Acute Maxillary Sinusitis.*—Very rarely one meets with an osteomyelitis of the superior maxilla associated with acute maxillary sinusitis. Such cases should be treated by a larger opening and drainage through the gingivo-buccal fold. All other cases of acute disease of this sinus may be satisfactorily treated intranasally.

3. *Chronic Suppuration of the Frontal, Ethmoid and Sphenoid.*—As all three of these groups are usually simultaneously involved, we will consider them together:

A. Those associated with multiple polyp formation in the nose. Most of these cases are accompanied by such extensive alterations in the mucous membrane lining the frontal, ethmoid and sphenoid, that intranasal treatment, while affording great relief, seldom affects a permanent cure. The polyps recur more or less rapidly in a large percentage of cases. An external operation may be relied on to cure.

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* Read in the Section on Laryngology and Otology of the American Medical Association, at the Sixtieth Annual Session, held at Atlantic City, June, 1909.

B. Frontal sinuses which are demonstrated by the skiagraph to be of large size with one or more septa and extensive prolongations over the roof of the orbit can seldom be so drained by intranasal operations as to prevent the recurrence of the symptoms with each succeeding attack of severe acute rhinitis. If the patient's general condition, therefore, will warrant it, I advise an external operation for this class of cases in preference to repeated intranasal treatments.

C. Closed empyemata of the frontal as evidenced by recurring attacks of supra-orbital pain without the history of any secretion from the nose or nasopharynx or occasional scanty secretion, which the examining physician fails to detect, and in which the skiagraph shows an evident involvement of the frontal, are best treated by an external operation.

D. Cysts of the frontal and cysts of the ethmoid region which do not bulge into the nasal cavity are proper cases for external operation. In this class of cases the anatomic structures are considerably altered and absorption of the bony wall of the cranium not infrequently has been observed. Any attempt to evacuate the cysts through the nose is too much a matter of guess work to be called good surgery.

E. Those in whom a fistula has formed leading from the frontal or ethmoid are advised to have an external operation. The question of scar does not affect these patients, as they already suffer a disfigurement which may be considerably improved after the operation.

4. Chronic Maxillary Sinusitis.—My present belief is that very few cases of chronic suppuration of the antrum need anything more than a thorough opening through the inferior meatus to effect a cure. If these patients do not recover promptly, I search for involvement of the ethmoidal cells or frontal sinus, and find that by curing the disease in this region the antrum promptly ceases to discharge. If, however, there is a tendency to recurrence of the disease two or three times a year as a result of attacks of acute rhinitis, I then recommend thorough opening of the antrum through the canine fossa.

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ABSTRACT OF DISCUSSION

ON PAPERS BY DRS. KYLE, LOEB AND COAKLEY

Dr. **Ross Hall Skillern**, Philadelphia: Dr. Kyle, speaking of the treatment of acute inflammation of the frontal sinus, makes the following statement: "The cavity, which is an open cavity, has been converted into a closed one. By what process? Simply by inflammation with its accompanying swelling of the surrounding structure as well as the orifice. Certainly then by shrinking these tissues at the right point, drainage by the natural orifice can be obtained." While this is, of course, true, it is open to modification. In the majority of cases we are able to bring about relief by the application of cocain to the hiatus and surrounding parts, but it has been my experience that this relief is often but momentary, from one to three hours, on account of the degree of inflammation and the narrowness of the nasofrontal duct. The mucous membrane quickly again becomes turgid with blood. In these cases I resort to a procedure which has invariably given good results, that is, infraction of the middle turbinate. It is a simple procedure which can hardly be dignified by the term operation, being done as follows: Apply 20 per cent. solution of cocain between the middle turbinate and processus uncinatus, wait five minutes, then introduce a blunt submucous retractor and pry the turbinate away from the lateral wall of the nose. Sometimes this will fracture the turbinate at the base, but more often it is necessary to introduce a long Killian speculum and spring apart the blades. This will invariably bring about the desired result. The advantages of this procedure are self-evident, as we procure good drainage room without sacrificing any tissue. The after-treatment consists merely in keeping the bowels open and giving aspirin one-half dram every two or three hours.

Dr. Loeb calls attention to the ethmoid cells which extend so high up as to be almost inaccessible to the intranasal operation. In the endonasal radical operation, suppuration in these cells may be overlooked and only be discovered at some later date.

They can easily be reached and opened by the Grünwald forceps. When operating on the nose we see the inferior edge of the middle turbinate far up in the nasal cavity, and it appears as though we are getting on dangerous ground when we penetrate a half inch beyond this point. As a matter of fact, this edge is approximately only half the distance between the floor of the nose and the lamina cribrosa.

In operating on the sphenoid sinus, a condition is liable to arise which may be very confusing. After one has exenterated the ethmoid cells, if the pars nasalis of the sphenoid sinus is very narrow one is apt to mistake the posterior ethmoid cell for the sphenoid sinus. This error can be discovered by measurement and exploring the wall near the septum where the end of the probe would strike the remainder of the nasal wall of the posterior ethmoidal cells.

Dr. Coakley states: "In all but the very acute cases complicated by cellulitis, when an immediate external operation is indicated, before deciding on recommending to the patient the intranasal or extranasal route, a complete examination should be made." I do not believe an external operation is ever indicated in an uncomplicated case of chronic frontal sinus empyema in which the patient has not as yet undergone an intranasal operation. In other words, I mean that the chances of relieving the symptoms are so great that the endonasal procedure should first be resorted to. I wish to emphasize the clause: "Relieving the symptoms" not curing the patient. After they are relieved it is a personal equation with the patient whether the discharge, occasional headaches, and possible chances of arising complications shall persuade him to submit to a radical operation.

This brings us to the following question: If the pain and the sensitiveness, together with the secretion, although improving do not entirely cease, how long shall we wait before advising a radical procedure? It seems to me that this will depend largely on the mental effect produced on the patient. As Dr. Coakley mentions in his sixth condition, some patients suffer much more than others in uncomplicated cases. In those who do not find the discharge and headache particularly annoying, it is wise to wait weeks and even months, for these cases often heal spontaneously; on the other hand, if the patient seems to be in a fair way of becoming a neurasthenic in consequence of his symptoms, no matter how trivial they appear to us, an external operation is indicated; therefore, fixing a time for a radical operation after the endonasal procedure depends entirely on the individual characteristics of the case.

Finally, in advising a radical operation, we must remember that it is by no means a minor procedure and every patient radically operated on does not always mean every patient radically cured.

Dr. **J. A. Stucky**, Lexington, Ky.: I fully agree with Dr. Skillern that frontal sinus, or any nasal accessory sinus surgery, is by no means minor surgery. I have recently had two patients with amblyopia due to trouble in the sphenoid sinus, who recovered after operation on the sinus. I have also had two cases of involvement of the frontal lobe of the brain due to suppuration in the frontal sinus. In one a large part of the anterior lobe was destroyed by suppuration.

I want to emphasize Dr. Coakley's remarks in regard to the skiagraph, and also, for the benefit of those just beginning this work, the necessity of proceeding cautiously. The last word has perhaps been said as to the time to operate on a mastoid, but this is not true regarding the operation on the nasal accessory sinuses. I am surprised that nothing has been said as to the mental disturbance in these conditions. I have published a paper on this subject and have now in course of preparation a paper going somewhat into detail as to the question of mental disturbance caused by sinus involvement.

Recently, I obtained permission to examine 1,000 patients in the Insane Asylum at Lexington, to determine the percentage having sinus trouble. The mental symptoms may be due to acute or subacute infection in the anterior part of the brain, the thickened and inflamed membrane being the cause. In no other way can we account for the subsidence of the symptoms after operation. Complete mental recovery may be predicted in many of these individuals after radical operation. I have proved this in five cases now and am surprised that more has not been written on this subject.

Dr. R. H. Good, Chicago: I am afraid to use a drill of any kind in the frontal sinus, but I am not afraid to use my frontal sinus rasp. Those who have read my articles will recall that I described chisels, but I am indebted to Dr. Joseph Beck, who has persuaded me to do the operation without chisels. The middle turbinate is removed in part or in its entirety; then I bite out the ethmoid cells up to the cribriform plate; then after having done that I use the rasp. There are rasps on the market that are not made smooth on one side—they should not be used. The instrument should be smooth on one side but cutting on the other side and in front. The rasp is introduced up to the floor of the skull. The orbital surface is smooth. You can rasp forward and you can not do any damage to the cranial cavity. If the ordinary methods of straightening the septum and removing the middle turbinate and some of the ethmoid cells fail, then it is time to do this operation. I do it in all cases in which a frontal sinus operation is indicated except when I suspect tumor or brain complication. The opening one can make with this rasp is large, and if the external operation is necessary afterward there has already been established a large opening into the nose. The rasping is away from the brain, and no damage can be done to the eye because that side of the rasp is smooth.

Dr. B. R. Shurly, Detroit: It has been my privilege for a decade or more to travel the middle road in the treatment of disease of the accessory sinuses. Waves of radicalism have come from Europe and the earthquake region of our country and waves of conservatism have come from the east and middle west, but I have still traveled on the same old middle road. There are many interesting points to be weighed in considering these problems. First, we might divide all here into three classes: first, those who form their views from clinical experience; second, those who derive their views from clinical experience and private practice, and, third, those who form their opinions from private practice alone. It seems to me the question we should ask in each of these cases is just how we should like that sinus treated if it were our own. The problem of the bacteriology of the condition is one not sufficiently weighed. We have more difficulty in controlling a sinusitis that is due to the streptococcus or *Bacillus prodigiosus* than one due to the *Staphylococcus albus* or *S. aureus*. And the resistance of the patient and personal equation are such important factors in this class of cases that they should have great weight with us before we decide on operative procedure. We all understand the necessity for drainage and the necessity for having as thorough drainage as possible. We should have an *x*-ray picture in every chronic case. In the acute cases we should treat the patients carefully with sprays, keeping up proper drainage from day to day, washing out the region carefully with antiseptic solutions. I am proud to say that the American physicians and surgeons to-day stand for first of all the comfort of their patients, and that is something we should all be proud of. The procedure in chronic cases can be carried on in a very conservative way in the beginning. We should find out what the resistance of the patient will be, and what we can do with irrigation or vaccine therapy when feasible and then proceed to the removal of the middle turbinate or an intranasal operation. If necessary, as a last resort, the radical procedure may be adopted.

Dr. Percy Fridenberg, New York: I want to speak from the ophthalmologic standpoint as to the choice of operation. The danger of the intranasal route is accentuated by bone-cutting instruments, drills, rasps, and so on, which must be used blindly and may easily penetrate the orbit, or cranial cavity. The dangers of infection, hemorrhage, and of traumatism to various important nervous and vascular structures, as the optic nerve, internal carotid and cavernous sinus, must be considered. Finally, the accuracy and completeness of the intranasal operation are problematical, and can be determined, as a rule, only by the subsequent course of the case. When there is evidence of involvement of the orbit to adopt the intranasal operation is simply a loss of time. In the development of this subject the ophthalmic surgeon and the rhinologist have seen the cases from a different standpoint. In the eye clinics the patients come for ocular conditions, motor paralysis, orbital abscess, exophthalmos and pain or intractable headache. These cases, as a rule, the rhinologist doesn't see, just as we do not see the milder cases with only nasal symptoms. The objection to the external operation has been from a rhinologic point of view, the fear of injuring the eye and the lachrymal apparatus. And I want to call attention to the fact that the external operation does not necessarily affect either of these structures. There is less danger of ocular injury in the external operation where the operator sees the cells and can gauge the operation by the conditions present than there is in the intranasal procedure where he can not know whether he has removed all the diseased area or not. In the external operation he does know this. Radiography gives us a great deal of information and is a great help in this work, especially in external operations.

Dr. H. C. Masland, Philadelphia: When there is pus in the sinus I have serious doubts as to the worth-while percentage of cures that are effected by treatment through the natural opening. The mechanics of the condition would call for drainage at the most dependent portion. The curved trocar is unsatisfactory, in that it can not be rotated without obscuring the vision, and if it is forced in it is liable to slip, to penetrate at the upper thinner part of the bony wall, or to lacerate the mucous membrane. A straight trocar can be rotated to cut, not force, its way through the thicker portion of the dividing wall at the floor of the antrum. A curved silver canula can be made in twenty-four hours to be inserted in this opening. It can have a collar at its inner end to be self-retaining. The curve fitted to each patient removes all questions of pressure distress; its outer end lies at the vestibule of the nose, obscured by the alæ of the nose. The patient with a suitable rubber bulb is thus permitted to give the antrum a thorough cleansing at home each day.

Dr. R. P. Scholz, St. Louis: Most of the speakers seem to agree that the conservative intranasal method, followed when necessary, by radical external operation, is the proper means of coping with sinus diseases. This being the middle path, seems to me to be the proper course. Ordinarily we should be as conservative as the case will permit, since after radical interference the nose is seldom so satisfactory an organ as when less radical means have been resorted to. Even when there are signs of the inflammation having spread beyond the limits of the sinus, as into the orbit, etc., it is often surprising what can be accomplished by the most conservative intranasal treatment, shrinkage of the nasal tissue so as to favor drainage, removal of polypi, lavage, etc. Of course, these patients need the closest observation on the part of the rhinologist, since many can only be coped with by radical external operative means. Not long ago two European writers described their methods of producing nasal suction. This principle (my statement being on the trial I have given it) is both an excellent diagnostic and therapeutic aid. I feel confident that it is one of our most valuable means of diagnosing ethmoidal suppuration. Not only is the pus sucked from the cavity as such but by the production of hyperemia (diminishing the size of the cavity) the pus is forced from the cell. One essayist claims polyp formation to be an indication for radical operation. To this I do not agree. Believing that in these cases often the polyp formation is the prolonging cause of suppuration. Frequently the simple removal of the polypi, thus establishing free drainage, will lead to entire restoration.

Dr. C. M. Robertson, Chicago: It seems to me that the first thing to do in treating cases of empyema of the sinuses is to determine whether the condition is acute or chronic; this is absolutely essential. The next thing is to determine the character of the inflammatory condition to be attacked. If it is of staphylococcus origin we can be more dilatory than if we have to deal with a more virulent infection. I operate very little on the frontal sinus, that is, radically. I think I am able to effect a cure in most of the cases intranasally by cutting away the anterior part of the middle turbinate and establishing free drainage. It is necessary, however, to have a skiagraph to determine the exact topography. If the sinus extends over the orbit or is divided by septa it is useless to try to treat it intranasally. With the anterior ethmoid cells intranasal treatment is more efficacious. I believe that it is necessary to conserve the turbinate tissue. It is a physiologic tissue and unless there is a great deal of disease we should try to save it. When polypi exist I have done the radical operation on the maxillary sinus and ethmoid cells and seen the polypi disappear. They shrink up when drainage is established, for they are nothing more than exuberant granulations. In the treatment of the posterior ethmoid cells and the sphenoid sinus I have not had such good results intranasally.

Dr. E. A. Crockett, Boston: We have heard a great deal about complete removal of the middle turbinate and intranasal removal of the ethmoidal labyrinth, and most of the gentlemen would leave us with the impression that it is a simple operation and that the external operation is much more difficult. Now, that does not accord with my experience. I always advocate extranasal operations in preference. It is easier for the man with limited experience. In Boston we have had no deaths from the external operation. On the other hand, I know of two deaths at the Eye and Ear Infirmary and two at the Massachusetts General Hospital following the intranasal operation. These statistics may not conform to the experience of men from other parts of the country, but the fact is significant that these patients were in the hands of four different men.

Dr. George M. Case, Elmira, N. Y.: During the spring of 1904, I spent some time in the clinic of Professor Jansen, of Berlin. It was not uncommon in one day to witness three or four operations for radical cure of chronic sinusitis. The operations were brilliant indeed; in three-quarters of an hour he would clean out frontal, ethmoid, maxillary and sphenoid sinuses, using drainage from each. It seemed a rapid way to cure these patients. But by inquiry and observation in the hospital I found many of these patients relapsed and required a second operation. Again, although the suppuration was lessened, these patients were uncomfortable, suffering intensely from dryness in the nose and throat, and requiring almost constant attention to have any degree of comfort. Of course, the middle turbinate was removed in all patients I saw operated on. My observations, both in Berlin and Vienna, and since, have taught me to be conservative in the management of these cases. Of course, if patients can not spend the time necessary to carry on a long and tedious nasal treatment we may be forced to institute radical measures early in the case. I think it poor surgery to sacrifice the turbinate and destroy nasal and lining mucous membrane of the sinuses, when we can get drainage by less radical measures.

Dr. C. F. Welty, San Francisco: I wish to report the death of two patients in San Francisco from the so-called intranasal operation. They were not my cases but came to my knowledge.

Dr. H. W. Loeb, St. Louis: A man can not be absolutely sure that he is in the frontal sinus. He may be in an ethmoid cell that is diseased and he may relieve the patient, but he doesn't know that he is in the frontal sinus. Dr. Coakley speaks of the impossibility of relieving sphenoid suppuration entirely by the nasal route. We have all seen patients operated on radically in which suppuration continued. Whether it is due to the impossibility of getting away all the diseased mucous membrane or not I am unable to say.

Dr. Crockett calls attention to the difficulty of the intranasal operation, but I think his inference is rather overdrawn in regard to the difference in the number of deaths in comparing the two operations. While there are thousands and thousands of operations done intranasally, there are comparatively few done extranasally, and not every one who has a death from the extranasal operation reports it. One trouble is that we do not look on the intranasal operation as a surgical procedure. Some rhinologists do it in the office. If we would take as much pains in operating intranasally as we do with the extranasal operation our results would be immeasurably better and there would be less danger of death. In the external operation we make the same preparation as if we were going to do an abdominal operation. The intranasal operation should be entitled to as much respect.

Dr. D. B. Kyle, Philadelphia: No one method will succeed in every case. The conservative method will fail occasionally and so will a radical operation. It is merely a question of judgment, the individual case, and the experience of the operator. Knowing when to operate is the most important thing, and we should always question whether we would do that particular operation on our own sinuses. If you try the conservative method you will find that you will *not* have to do the radical operation very often.

Clinical Notes

THE TRANSPARENCY OF MATTER FOR *X*-RAYS NOT AFFECTED BY TRANSVERSE RADIATION FROM A SECOND TUBE

R. A. MILLIKAN, Ph.D. and E. J. MOORE, M.A.
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In a recent article[1] it was asserted that greater transparency and, as a result, better skiagraphs, can be obtained in *x*-ray work by having two sources of the rays at right angles to each other, radiating simultaneously on the body to be photographed. In order to test the truth of this assertion by the electroscope method the following experiments were undertaken:

Two *x*-ray bulbs, one which will be called the direct bulb D and the other the transverse bulb T, were arranged as indicated in the diagram, both being carefully enclosed in lead screens. Openings in the screens were made at a, b, c and d, through which the rays could pass and produce ionization in the three electroscopes, E_1, E_2 and E_3. These electroscopes were protected in such a way that they were unaffected by the radiation from the bulbs when the openings a, b, c and d were closed by lead shutters.

The two bulbs D and T were always run simultaneously during all observations. The electroscope at E_1 was used for observing, first, the intensity of the rays from D which pass through any body placed at A when the shutter c is closed and the shutter b open; second, the intensity of the rays from D which pass through the body at A when both b and c are open so that the body is being radiated on by both D and T; third, the intensity of the secondary rays which enter E_1 when b is closed and c open so that only transverse rays fall on the body at A. If the transverse rays from T increase the transparency of the body at A for the direct rays from D, the effect produced per second on E_1 when both b and c are open should be greater than the sum of the two effects produced per second on E_1 when b and c are opened successively.

The electroscopes E_2 and E_3 were used merely for eliminating irregularities in the rates of radiation of the two bulbs D and T. E_2 was affected only by D, and therefore served as a measure of the rate of radiation of D, while E_3 was affected only by T, and hence served as a measure of the rate of radiation of T.

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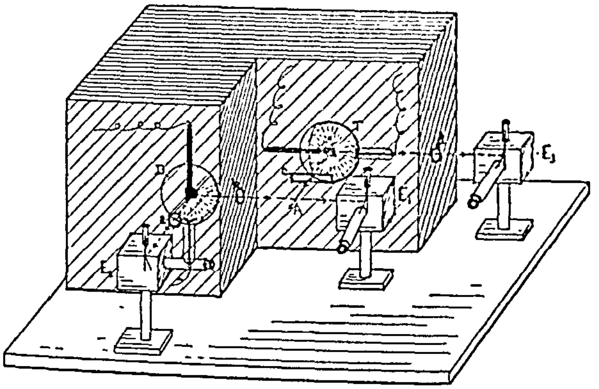
[1] O'Donnell, P. S.: A New Method of Taking *X*-Ray Pictures, The Journal A. M. A., April 17, 1909, lii, 1246.

The observations were taken in the following manner: There was first placed at A a piece of pine wood of such thickness that rays from D had to pass through 12 inches of pine in order to reach E_1. All of the shutters, a, b, c and d, were opened and the rays from D and T were allowed to pass simultaneously through this wood. The effects on all the electroscopes were observed. The openings c and d were then closed and rays from D alone allowed to pass through A, and the effects on the electroscopes E_1 and E_2 again observed. Finally a and b were closed, c and d opened, and rays from T alone allowed to pass through A, and the effects in the electroscopes E_2 and E_3 observed.

Now if we subtract from the effect produced on E_1 when both D and T are simultaneously radiating on the body at A, the effect on E_1 when T alone is radiating on the body, and call this corrected value e_1, and if we call the effect on E_2, e_2, and the effects on E_1 and E_2 when D alone is radiating on the body e'_1 and e'_2, then it is evident that the ratio $e_1 : e_2$ must equal the ratio $e'_1 : e'_2$, provided there is no increase in the transparency due to transverse radiation from T. This we found to be the case within the limits of our observational error.

The energy for the bulbs was furnished by two 12-inch induction coils, the primaries being connected in series with a Wehnelt interrupter on a 110-volt circuit. The current in the primary was varied from 10 to 25 amperes.



In the accompanying tables the numbers immediately under E_1, E_2, E_3 are the readings of the electroscopes before the bulbs were energized. The numbers just beneath these are the electroscope readings after the bulbs had been energized for a period of about six seconds. The third rows represent differences, and these are, of course, proportional to the amounts of ionizing energy entering the electroscopes under the conditions specified.

It will be seen that in the first three trials, in which the absorbing material was unchanged, the values of $e'_1 : e'_2$ agree with each other, as of course they should. It will also be seen that $e_1 : e_2$ agrees in every case with $e'_1 : e'_2$ within the limits of observational error, which were about 1 or 2 per cent.

In the fourth and fifth trials conditions as regards absorbing medium were changed, but $e_1 : e_2$ still agrees in each case with $e'_1 : e'_2$ to within the limits of observational error.

In each of the above experiments observations were made by two independent observers whose results always agreed with one another to within the limits of observational error.

These observations appear to demonstrate conclusively that under the conditions of our experiments the effects which can be obtained from D through A are altogether independent of the radiations of the transverse bulb T; i. e., the transparency of the body at A to radiations from D is altogether uninfluenced by transverse radiations from T.

TRIAL 1.—WOOD USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
Both Bulbs (a, b and c open)			
0.5	1.5	2.6	$\frac{e_1}{e_2}=\frac{31.3}{27.8}=1.126$
33.9	29.3	23.	
34.4	27.8	20.4	
Direct Bulb (c and d closed)			
5.6	3.0		$\frac{e'_1}{e'_2}=\frac{34.}{30.4}=1.118$
39 6	33.4		
34.0	30.4		
Transverse Bulb (a and b closed)			
4.4	1.6		
7.6	22.6		An apparent increase in transparency of 0.7 per cent.
3.2	21 0		

TRIAL 2—WOOD USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
6.3	0 6	1.6	$\frac{e_1}{e_2}=\frac{30.2}{27.2}=1.110$
39.6	26.6	21.8	
33.3	27.2	20.2	
	Direct		
6.6	1.5		$\frac{e'_1}{e'_2}=\frac{30.8}{27.5}=1.120$
37.4	29.		
30.8	27 5		
	Transverse		
4.6	.6		
7.6	19.6		An apparent decrease in transparency of about 1 per cent
3.0	19.0		

TRIAL 3.—WOOD USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
0.3	0 5	3.1	$\frac{e_1}{e_2}=\frac{33.4}{30.1}=1.110$
37.3	29.6	25.5	
37.0	30.1	22.4	
	Direct		
2.4	1.6		$\frac{e'_1}{e'_2}=\frac{32.8}{29.2}=1.123$
35.2	30.8		
32.8	29.2		
	Transverse		
.6	0.6		
4.2	21.5		An apparent decrease in transparency of 1 per cent.
3.6	22.1		

TRIAL 4.—WATER USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
	6.4	2.5	$\frac{e_1}{e_2}=\frac{27.}{8.4}=3.21$
24.2	33.4	23.6	
17.6	27.0	21.1	
	Direct		
2.2	0.8		$\frac{e'_1}{e'_2}=\frac{28.2}{8.8}=3.20$
11.	27.4		
8.8	28.2		
	Transverse		
5.4	2.8		
14.7	24.2		An apparent decrease in transparency of 0.33 per cent.
9.3	21.4		

TRIAL 5.—WATER USED AS ABSORBING MEDIUM

E_1	E_2	E_3	
	Both Bulbs		
3.6	1.6	3.2	$\frac{e_1}{e_2}=\frac{26.5}{25.5}=1.039$
38.5	27.3	23.4	
34.9	25.7	20.2	
	Direct		
5.4	7.7		$\frac{e'_1}{e'_2}=\frac{27.2}{25.9}=1.050$
32.6	33.6		
27.2	25.9		
	Transverse		
.9	.2		
9.5	20.9		An apparent decrease in transparency of 1 per cent.
8.6	20.7		

University of Chicago (5605 Woodlawn Ave.)

AN OVARIAN ABSCESS CONTAINING A LUMBRICOID WORM WITHIN THE CAVITY

BACILLUS COLI COMMUNIS INFECTION *

HENRY D. FRY, M.D., Sc.D.
WASHINGTON, D. C.

Patient.—M. J., colored, primipara, aged 23, was taken sick suddenly, Jan. 21, 1909, with pain in the lower abomen, followed by chills, restlessness, and vomiting. No information of importance was elicited from her family history.

History.—For some time before her present illness began, her appetite had been poor; she had suffered pain in her lower abdomen, and nausea after eating; her bowels usually moved twice daily.

Examination.—Jan. 23, 1909, she was admitted to Garfield Memorial Hospital. Her tongue was coated with a grayish white fur; facial expression was drawn; she was in dorsal decubitus position with knees flexed. Pulse was 132; temperature, 103; leucocyte count, 20,560. The abdominal muscles were rigid, especially the left rectus; there was tenderness on pressure over both ovarian regions; on the left side a mass was outlined as big as a hen's egg. Vaginal examination revealed double salpingitis and a large mass on the left side. The afternoon of the day of admission she vomited a lumbricoid worm about 10 centimeters long. Microscopic examination of the feces showed numerous ova of the *Ascaris lumbricoides*.

Operation.—She was kept under observation until the acute symptoms had subsided. Temperature fluctuated between 98 and 102.5 F., and remained normal after February 5. Leucocytosis was 14,750. February 9 operation was performed at my clinic, assisted by the house staff. The right appendage was inflamed and adherent. The left ovary and tube were adherent to the cornua of the uterus; the ovary was enlarged to the size of a hen's egg, the surface was smooth, and there were no intestinal adhesions. While enucleating the mass the ovarian wall of the abscess sac ruptured. About 30 c.c. of pus escaped into the abdominal cavity, and projecting from the abscess through the tear in the wall was a small lumbricoid worm about 6 or 7 centimeters long; it was dead and flattened. Both tubes and ovaries were removed. The patient made an uneventful recovery.

Pathologist's Report (by J. B. Nichols).—Ovary enlarged. Dim... 6 cm. long, 4 cm. thick; yellowish-white color. sin... throughout its entire length. ...mooth but ... of ... s ... y ... y ... l

o... op...

Dr. ... sure tha... cell that ... doesn't know ... speaks of the ... entirely by the ... ated on radically in ... is due to the imposs... mucous membrane or ...

Dr. Crockett calls att... operation, but I think ... regard to the difference i... the two operations. Whil... of operations done intrana...

water, the embryo gains liberty from the egg envelop and grows into adult state. The development is rapid and the female worm extrudes ova at the end of one month. The life of the worm does not exceed one year.

Lumbricoid worms are expelled in feces; are vomited; are passed out through the mouth or nares; through the Eustachian tube and external ear; through the nasal fossæ and lachrymal ducts to the inner angle of the eye.

Lumbricoid worms travel extensively through natural and artificial passages. They are passed into the trachea and cause death by suffocation and by gangrene of the lung. They have been found in the pancreatic duct; in the common bile duct; in the hepatic and cystic ducts, and in the gall bladder. Hepatic abscesses have been caused by lumbricoid worms. They have perforated the intestines and escaped from the peritoneal cavity into the pleura; through the ventral wall; through umbilical and inguinal tumors and into lumbar and psoas abscesses. Hippocrates reported a worm expelled from an appendiceal abscess. Numerous cases of a similar kind have been reported since.

The genitourinary tract has not escaped invasion by the *Ascaris lumbricoides.* Blanchard mentions the following cases:

> Alghisi: Infant, 7 years of age, passed through the urethra in one year 60 worms—ascarides and oxyures.
>
> Chapotin: A negro, 20 years old, passed by the urethra a number of ascarides from 3 to 4 cm. long.
>
> Cases by Kingdom, Krakowitzer and Du Jardin of lumbricoid worms passed with the urine at intervals from eight or ten days to several months.
>
> A fistulous tract leading from the bowels to the bladder was demonstrated by autopsy in the cases of Pereboom, Kingdom and Krakowitzer.
>
> Anciaux reported a woman who passed lumbricoides from the vagina by a fistulous tract to the bowels.
>
> Numerous cases have been reported of round worms having been found within the vagina. Bedel reported a case of hydrometritis complicated by the presence of a lumbricoid worm within the uterus.

The *Ascaris lumbricoides* gains access to the genitourinary passages of the male and female by passing from the intestines into the peritoneal cavity; by fistulous tracts communicating with the bowel; and by passing externally from the anus into the vagina or urethra.

The only case I can find recorded of the presence of these worms within the ovary is that of Dufour:[2]

> A girl, 17 years old, was operated on Aug. 28, 1904, at the Hôpital St. Pierre for a multilocular cyst of the right ovary. The intestines were adherent to the cyst, and in detaching them a tear in the cyst wall gave escape to a viscid, gelatinous substance, and projecting from the opening was found a lumbricoid worm. It was removed; a second worm was found, then a third. They were alive. An examination of the ... of the intestinal wall that had been adherent to the ...d two small perforations.

... it is evident from the condition found at ...d from the examination of the patho... the lumbricoid did not pass from ...ovary. The only satisfactory expla... ...ated through the vagina, uterus, ...here it gained access to the in... Graafian follicle.

...and T. ...
...as a meas... The British Imperial Cancer ... the Duke of Bedford, the ...ected only ... *Science.*
... of radiatio...

...ermant des lombrics ... Method of Tal... ...ynéc., xx, 97. ... 1909, iii, ...

bone, while the spleen may possibly produce red corpuscles before birth, and some physiologists believe it is possible, under certain anemic conditions, for the spleen again to assume such work. The spleen, however, may be considered as a storehouse for red corpuscles and the place for their destruction, although after serious hemorrhage the spleen doubtless gives up large numbers of healthy corpuscles to the needs of the blood. Also, under conditions of hemorrhage, nucleated red corpuscles will be found in the blood stream, having been prematurely given to the blood by the red bone marrow in the blood's need. This same need of the blood for erythrocytes seems to be one of the reasons for finding nucleated reds in pernicious anemia. The hemolymph nodes, glands near the vertebral column, partake more of the action of splenic tissue than of blood-forming tissue. That is, in serious anemic conditions they may become very active, but perhaps do not actually produce red corpuscles as does the bone marrow. The destruction of red corpuscles is evidenced by the splenic vein containing more hemoglobin than is found in any other part of the circulation. This going directly to the liver is quickly changed by the latter into material for bile pigments. Ninety-five per cent. of the contents of the red corpuscles is hemoglobin, a very unstable compound, and about 14 per cent. of human blood consists of hemoglobin, equal to about 750 grams in the sturdy adult of 165 pounds. Ninety-six per cent. of this hemoglobin is globulin and 4 per cent. is hematin, which contains iron. As this hematin is concerned in the oxygen and carbonic acid exchange in the lungs, if its iron content is insufficient or if the number of red corpuscles is much diminished, breathlessness and dyspnea on the least exertion occur. The amount of hemoglobin in each corpuscle is decreased in chlorosis and increased in pernicious anemia. While the number of the red corpuscles is decreased in the secondary anemias, and while the number is enormously decreased in pernicious anemias, the hemoglobin content of each corpuscle may be decreased or increased. It is, therefore, essential to determine the number of red corpuscles and the hemoglobin content before the best medicinal treatment may be inaugurated.

With such an investigation, an apparent anemia may be proved not to be such, and sometimes even the reverse. Many neurasthenic, pale patients really have a plus red blood count in the peripheral blood. Certainly iron is not needed by them. It will also be found of value to take the blood pressure of anemic patients, as many patients with abnormally low pressure will have a general improvement of all metabolism if circulatory stimulants are given, possibly cardiac tonics, and possibly vasoconstrictors. Certainly patients with impaired, sluggish circulation, possibly a tendency to pendent edemas, cold hands and feet, perhaps dilated peripheral vessels, and sluggish circulation in the stomach and intestines will not recover with iron, arsenic, or other so-called blood-making drugs. Such patients certainly should not be urged to take physical exercise, when by their blood condition they are absolutely unfitted for it. The harm from the exhaustion caused is far in excess of any good that will be done by the exercise. Massage and sometimes gentle hydrotherapeutic measures are of value as [illegible]g to tone up the skin and muscle circulation [illegible] fore, improve the general circulation.

[illegible] g been determined that the patient has a loss [illegible] obin in excess of the loss of red corpuscles, [illegible] ainly indicated, but the amount needed is [illegible] y very small, when it is remembered that from 0.005 to 0.006 gram daily is all that occurs in an ordinary diet, and that from 0.003 to 0.005 gram of iron a day will preserve the normal iron equilibrium in normal individuals. The feeding of much iron will not increase the iron output in the urine, which is always very small, but it will increase the output in the feces. The food iron, or iron administered as such, is absorbed in small amount from the duodenum, circulates in the blood, and is mostly excreted again by the epithelial cells of the intestine in the lower part of the canal. The iron content of the liver has been found increased by the administration of iron, and iron has been found in the epithelial cells of the duodenum. The epithelial cells of the lower intestine and cecum will give the reaction for iron some time after it has been administered. The administration of iron also does not much increase the amount of iron that is in the bile. Almost all the iron administered, then, passes off through the intestines without having ever been absorbed, and the excess of even the iron absorbed is quickly excreted by the epithelium of the lower intestines; therefore, the body really uses daily but a minute amount of iron. Consequently, if the iron in the hematin of the red corpuscles is all that is needed to improve an anemic condition due to diminished hemoglobin, the need will be completely satisfied and more than satisfied by one grain of iron a day. Also, it is a fact beyond all reasonable doubt that an inorganic iron is just as efficient in raising the hematin content of the hemoglobin and of stimulating the hematopoietic organs and improving the anemic condition as is any organic iron, and there is positively, absolutely, no excuse whatsoever for ordering a patient to buy a dollar bottle of some proprietary iron product, no matter how elegant that product may be. A frequent excuse made for ordering such iron preparations is that other iron does not agree with the patient's stomach, or causes indigestion, or causes headache, constipation, and other unpleasant symptoms. The only reason that such symptoms ever occur from an inorganic iron is because too much is administered. One drop of the tincture of the chlorid of iron in a little clean lemonade or orangeade is sufficient to satisfy the blood need and can never cause any harm. The sugar of iron tablet (*Eisenzucker*), i. e., the saccharated oxid of iron, in a three-grain tablet, given once a day, can cause nothing but good to the patient. The Blaud pill, or the dry carbonate of iron capsule are other elegant preparations of iron, and if three a day cause headache one a day is sufficient. The reduced iron capsule is the only other form of iron that is positively needed in the Pharmacopeia. If iron is badly needed in serious anemia, there is nothing that is such a stimulant to digestion and to the organs concerned in the production or nutrition of red corpuscles as the tincture of the chlorid of iron, and five-drop doses, in a sour menstruum as suggested may be given, in serious conditions of infection, three or four times in twenty-four hours, with marked benefit to the patient. In fact, in serious illnesses, and especially in septic conditions when the diet is perhaps iron-free, one or two doses a day of a simple iron will often protect the blood corpuscles from hemoglobin loss.

To return to chlorosis: The cause has not been definitely determined. For some reason or other these patients do not metabolize to blood iron the food iron that they ingest. This may be a gastrointestinal chemical mistake, or it may be some secretory disturbance. In this kind of anemia large doses of iron have sometimes been found of more benefit than small doses, possibly because they satisfy the chemical mistake in the intestines. Frequently the same beneficial results have been obtained by the administration of small doses of salines, as Rochelle salt or other simple laxative. This must again be improvement caused by correcting chemical changes in the intestines that are pernicious, or possibly a freer action of the bowels may prevent autoinfection from causing disturbance of the blood.

From the standpoint of disturbance of internal secretions, if chlorotic girls also have the condition of amenorrhea, there is no drug that will be of more benefit than thyroid if administered in small doses. Menstruation develops and chlorosis disappears in a large proportion of cases. It should be emphasized that the dose of thyroid in chlorosis should be small, three grains of the official preparation a day, except, perhaps, for the first week of treatment.

It is perhaps true in the conditions just discussed that manganese, in the form of the dioxid, will be of as much value as iron, but when small doses of iron are sufficient, why consider or ponder the value of manganese? Why ever use a drug of secondary importance when the drug of primary importance suffices?

Now as to the value of arsenic in this condition of chlorosis. Arsenic may be a slight stimulant to the bone marrow, and sometimes is. Fatty degeneration of the bone marrow has been caused by arsenic, as well as fatty degeneration of other organs. It is a foreign element in the system, and theoretically is a poison. It stimulates many secretions, principally that of the thyroid gland, and the administration of arsenic in exophthalmic goiter cases has repeatedly made the symptoms worse. Its slight irritant action to the stomach certainly does increase the appetite, and we are all aware of its bad digestive action when such stimulation is excessive. It may also have some antiseptic action in the bowels which may be of value in chlorosis. In chorea salol and salicylic acid, both bowel antiseptics, will often do as much good as arsenic, and it is quite possible that the choreic disturbances proceed from some kind of intestinal infection. When arsenic is in the blood in sufficient amounts to produce symptoms of its activity, such as edema under the eyes in the morning, besides gastrointestinal disturbances, it is also in sufficient amount to irritate the kidneys, and if the urine be carefully tested it will be found often to contain albumin. During such intense action the arsenic is also likely to cause a sudden loss of red corpuscles, which is the opposite of the action from it that is desired. While small doses of arsenic may be of value in chlorosis, its medicinal value is not comparable to that of iron or even thyroid.

In secondary anemias it is only necessary medicinally from the blood standpoint alone to administer daily a small dose of inorganic iron. If the cause of the anemia can be stopped, the blood will improve.

If primary anemia does not from its blood picture present the condition of pernicious anemia, and yet no secondary cause can be found, we must believe that an incipient stage of pernicious anemia may be present, and should treat the condition as actively as though the blood picture of that disease was in evidence. In these cases and in pernicious anemia the content of the red blood corpuscles is perfect or even plus, and iron does but little good. While the red marrow of bone may be actually diseased, and an insufficient number of red corpuscles be produced, or while there may be enormous destruction of the red blood corpuscles in the spleen or elsewhere, there is probably always an intestinal cause, and there may be serious liver disturbance. The frequent record of improvement in anemia from large doses of arsenic is constantly offset by the reports of cases in whom the apparent first improvement was followed by sudden, great and serious loss in the number of red corpuscles. This is especially true if, during the arsenic treatment of pernicious anemia, any infection attacks the patient. In other words, while arsenic is perhaps the most frequently successful treatment of pernicious anemia, if the patient is helped at all, it may also be a frequent cause of increased blood defect. Certainly when large doses are given, the danger of general fatty degeneration, and the danger of kidney inflammation, and the danger of localized or even general neuritis, is great. Like the bad effects of other treatments, serious injuries from arsenic have been rarely reported, and perhaps many times have not even been recognized.

It has been stated that arsenic has many times been given hypodermically with better success than when given by the mouth, and doses thus administered have been gradually increased to the point of poisonous symptoms. Recently Dr. William L. Harris, of Providence, R. I., has advocated the hypodermic injection of iron, arsenic and mercury, in small doses, as a treatment for inoperable cancer, and he states he has had good results from such treatment. He has had prepared for him by a pharmacist in Providence little glass aseptic ampoules containing the trioxid of arsenic, 1/40 of a grain, and the citrate of iron, ⅓ of a grain, in 15 minims of distilled water. If one decides to use arsenic hypodermically in anemia, certainly this combination would be a good one to use.

Sometimes most successful stimulation of the red blood-forming organs is caused by the administration of preparations of red bone marrow. It is of frequent occurrence in any kind of anemia to find the red blood corpuscles increased in number under the administration of red bone marrow.

While it can not be decided from the blood picture that a patient is not in the incipient stage of pernicious anemia, other symptoms may bear out the possibility of such a condition. It can also never be stated that a patient suffering from well-developed pernicious anemia can not improve and be practically well for a long time. Patients apparently in the last stages of exhaustion from the disease have been known to recover and to remain well for a long time. Improvements, however, in pernicious anemia are likely not to be permanent. On the other hand, some patients without the typical blood picture of pernicious anemia, and with no other evident cause of the anemia than a blood condition, go continuously and persistently down hill in spite of all treatment.

Successful Operative Treatment of Gastric Crises.—O. Foerster of Breslau calls attention to the fact that the gastric crises of tabes are always ushered in by the pain, and that this may persist alone for some time before vomiting and hypersecretion occur. The trouble is evidently the result of morbid irritation of the sensory nerves of the stomach, probably the seventh to the ninth spinal roots. He reports a case of gastric crises in a syphilitic man of 47. During the last two of the six years since they began they have been practically continuous, the vomiting keeping up for three weeks at a time, with intervals of only five or six days when, under morphin, he was able to retain food. No treatment gave relief until Foerster advised resection of the nerve roots, which he regarded as the source of the disturbances, and Küttner resected the seventh to the tenth dorsal roots. The day after the operation the patient called for food and retained it, and there has been no vomiting and no more pain in the gastric region during the two months since the operation. The case is reported in the *Allg. med. Central-Zeitung*, April 3, 1909.

bone, while the spleen may possibly produce red corpuscles before birth, and some physiologists believe it is possible, under certain anemic conditions, for the spleen again to assume such work. The spleen, however, may be considered as a storehouse for red corpuscles and the place for their destruction, although after serious hemorrhage the spleen doubtless gives up large numbers of healthy corpuscles to the needs of the blood. Also, under conditions of hemorrhage, nucleated red corpuscles will be found in the blood stream, having been prematurely given to the blood by the red bone marrow in the blood's need. This same need of the blood for erythrocytes seems to be one of the reasons for finding nucleated reds in pernicious anemia. The hemolymph nodes, glands near the vertebral column, partake more of the action of splenic tissue than of blood-forming tissue. That is, in serious anemic conditions they may become very active, but perhaps do not actually produce red corpuscles as does the bone marrow. The destruction of red corpuscles is evidenced by the splenic vein containing more hemoglobin than is found in any other part of the circulation. This going directly to the liver is quickly changed by the latter into material for bile pigments. Ninety-five per cent. of the contents of the red corpuscles is hemoglobin, a very unstable compound, and about 14 per cent. of human blood consists of hemoglobin, equal to about 750 grams in the sturdy adult of 165 pounds. Ninety-six per cent. of this hemoglobin is globulin and 4 per cent. is hematin, which contains iron. As this hematin is concerned in the oxygen and carbonic acid exchange in the lungs, if its iron content is insufficient or if the number of red corpuscles is much diminished, breathlessness and dyspnea on the least exertion occur. The amount of hemoglobin in each corpuscle is decreased in chlorosis and increased in pernicious anemia. While the number of the red corpuscles is decreased in the secondary anemias, and while the number is enormously decreased in pernicious anemias, the hemoglobin content of each corpuscle may be decreased or increased. It is, therefore, essential to determine the number of red corpuscles and the hemoglobin content before the best medicinal treatment may be inaugurated.

With such an investigation, an apparent anemia may be proved not to be such, and sometimes even the reverse. Many neurasthenic, pale patients really have a plus red blood count in the peripheral blood. Certainly iron is not needed by them. It will also be found of value to take the blood pressure of anemic patients, as many patients with abnormally low pressure will have a general improvement of all metabolism if circulatory stimulants are given, possibly cardiac tonics, and possibly vasoconstrictors. Certainly patients with impaired, sluggish circulation, possibly a tendency to pendent edemas, cold hands and feet, perhaps dilated peripheral vessels, and sluggish circulation in the stomach and intestines will not recover with iron, arsenic, or other so-called blood-making drugs. Such patients certainly should not be urged to take physical exercise, when by their blood condition they are absolutely unfitted for it. The harm from the exhaustion caused is far in excess of any good that will be done by the exercise. Massage and sometimes gentle hydrotherapeutic measures are of value as tending to tone up the skin and muscle circulation and, therefore, improve the general circulation.

It having been determined that the patient has a loss of hemoglobin in excess of the loss of red corpuscles, iron is certainly indicated, but the amount needed is theoretically very small, when it is remembered that from 0.005 to 0.006 gram daily is all that occurs in an ordinary diet, and that from 0.003 to 0.005 gram of iron a day will preserve the normal iron equilibrium in normal individuals. The feeding of much iron will not increase the iron output in the urine, which is always very small, but it will increase the output in the feces. The food iron, or iron administered as such, is absorbed in small amount from the duodenum, circulates in the blood, and is mostly excreted again by the epithelial cells of the intestine in the lower part of the canal. The iron content of the liver has been found increased by the administration of iron, and iron has been found in the epithelial cells of the duodenum. The epithelial cells of the lower intestine and cecum will give the reaction for iron some time after it has been administered. The administration of iron also does not much increase the amount of iron that is in the bile. Almost all the iron administered, then, passes off through the intestines without having ever been absorbed, and the excess of even the iron absorbed is quickly excreted by the epithelium of the lower intestines; therefore, the body really uses daily but a minute amount of iron. Consequently, if the iron in the hematin of the red corpuscles is all that is needed to improve an anemic condition due to diminished hemoglobin, the need will be completely satisfied and more than satisfied by one grain of iron a day. Also, it is a fact beyond all reasonable doubt that an inorganic iron is just as efficient in raising the hematin content of the hemoglobin and of stimulating the hematopoietic organs and improving the anemic condition as is any organic iron, and there is positively, absolutely, no excuse whatsoever for ordering a patient to buy a dollar bottle of some proprietary iron product, no matter how elegant that product may be. A frequent excuse made for ordering such iron preparations is that other iron does not agree with the patient's stomach, or causes indigestion, or causes headache, constipation, and other unpleasant symptoms. The only reason that such symptoms ever occur from an inorganic iron is because too much is administered. One drop of the tincture of the chlorid of iron in a little clean lemonade or orangeade is sufficient to satisfy the blood need and can never cause any harm. The sugar of iron tablet (*Eisenzucker*), i. e., the saccharated oxid of iron, in a three-grain tablet, given once a day, can cause nothing but good to the patient. The Blaud pill, or the dry carbonate of iron capsule are other elegant preparations of iron, and if three a day cause headache one a day is sufficient. The reduced iron capsule is the only other form of iron that is positively needed in the Pharmacopeia. If iron is badly needed in serious anemia, there is nothing that is such a stimulant to digestion and to the organs concerned in the production or nutrition of red corpuscles as the tincture of the chlorid of iron, and five-drop doses, in a sour menstruum as suggested may be given, in serious conditions of infection, three or four times in twenty-four hours, with marked benefit to the patient. In fact, in serious illnesses, and especially in septic conditions when the diet is perhaps iron-free, one or two doses a day of a simple iron will often protect the blood corpuscles from hemoglobin loss.

To return to chlorosis: The cause has not been definitely determined. For some reason or other these patients do not metabolize to blood iron the food iron that they ingest. This may be a gastrointestinal chemical mistake, or it may be some secretory disturbance. In this kind of anemia large doses of iron have sometimes been found of more benefit than small doses, possibly because they satisfy the chemical mistake in the intestines. Frequently the same beneficial results have been obtained by the administration of small doses of salines, as Rochelle salt or other simple laxative. This must again be improvement caused by correcting chemical changes in the intestines that are pernicious, or possibly a freer action of the bowels may prevent autoinfection from causing disturbance of the blood.

From the standpoint of disturbance of internal secretions, if chlorotic girls also have the condition of amenorrhea, there is no drug that will be of more benefit than thyroid if administered in small doses. Menstruation develops and chlorosis disappears in a large proportion of cases. It should be emphasized that the dose of thyroid in chlorosis should be small, three grains of the official preparation a day, except, perhaps, for the first week of treatment.

It is perhaps true in the conditions just discussed that manganese, in the form of the dioxid, will be of as much value as iron, but when small doses of iron are sufficient, why consider or ponder the value of manganese? Why ever use a drug of secondary importance when the drug of primary importance suffices?

Now as to the value of arsenic in this condition of chlorosis. Arsenic may be a slight stimulant to the bone marrow, and sometimes is. Fatty degeneration of the bone marrow has been caused by arsenic, as well as fatty degeneration of other organs. It is a foreign element in the system, and theoretically is a poison. It stimulates many secretions, principally that of the thyroid gland, and the administration of arsenic in exophthalmic goiter cases has repeatedly made the symptoms worse. Its slight irritant action to the stomach certainly does increase the appetite, and we are all aware of its bad digestive action when such stimulation is excessive. It may also have some antiseptic action in the bowels which may be of value in chlorosis. In chorea salol and salicylic acid, both bowel antiseptics, will often do as much good as arsenic, and it is quite possible that the choreic disturbances proceed from some kind of intestinal infection. When arsenic is in the blood in sufficient amounts to produce symptoms of its activity, such as edema under the eyes in the morning, besides gastrointestinal disturbances, it is also in sufficient amount to irritate the kidneys, and if the urine be carefully tested it will be found often to contain albumin. During such intense action the arsenic is also likely to cause a sudden loss of red corpuscles, which is the opposite of the action from it that is desired. While small doses of arsenic may be of value in chlorosis, its medicinal value is not comparable to that of iron or even thyroid.

In secondary anemias it is only necessary medicinally from the blood standpoint alone to administer daily a small dose of inorganic iron. If the cause of the anemia can be stopped, the blood will improve.

If primary anemia does not from its blood picture present the condition of pernicious anemia, and yet no secondary cause can be found, we must believe that an incipient stage of pernicious anemia may be present, and should treat the condition as actively as though the blood picture of that disease was in evidence. In these cases and in pernicious anemia the content of the red blood corpuscles is perfect or even plus, and iron does but little good. While the red marrow of bone may be actually diseased, and an insufficient number of red corpuscles be produced, or while there may be enormous destruction of the red blood corpuscles in the spleen or elsewhere, there is probably always an intestinal cause, and there may be serious liver disturbance. The frequent record of improvement in anemia from large doses of arsenic is constantly offset by the reports of cases in whom the apparent first improvement was followed by sudden, great and serious loss in the number of red corpuscles. This is especially true if, during the arsenic treatment of pernicious anemia, any infection attacks the patient. In other words, while arsenic is perhaps the most frequently successful treatment of pernicious anemia, if the patient is helped at all, it may also be a frequent cause of increased blood defect. Certainly when large doses are given, the danger of general fatty degeneration, and the danger of kidney inflammation, and the danger of localized or even general neuritis, is great. Like the bad effects of other treatments, serious injuries from arsenic have been rarely reported, and perhaps many times have not even been recognized.

It has been stated that arsenic has many times been given hypodermically with better success than when given by the mouth, and doses thus administered have been gradually increased to the point of poisonous symptoms. Recently Dr. William L. Harris, of Providence, R. I., has advocated the hypodermic injection of iron, arsenic and mercury, in small doses, as a treatment for inoperable cancer, and he states he has had good results from such treatment. He has had prepared for him by a pharmacist in Providence little glass aseptic ampoules containing the trioxid of arsenic, 1/40 of a grain, and the citrate of iron, ⅓ of a grain, in 15 minims of distilled water. If one decides to use arsenic hypodermically in anemia, certainly this combination would be a good one to use.

Sometimes most successful stimulation of the red blood-forming organs is caused by the administration of preparations of red bone marrow. It is of frequent occurrence in any kind of anemia to find the red blood corpuscles increased in number under the administration of red bone marrow.

While it can not be decided from the blood picture that a patient is not in the incipient stage of pernicious anemia, other symptoms may bear out the possibility of such a condition. It can also never be stated that a patient suffering from well-developed pernicious anemia can not improve and be practically well for a long time. Patients apparently in the last stages of exhaustion from the disease have been known to recover and to remain well for a long time. Improvements, however, in pernicious anemia are likely not to be permanent. On the other hand, some patients without the typical blood picture of pernicious anemia, and with no other evident cause of the anemia than a blood condition, go continuously and persistently down hill in spite of all treatment.

Successful Operative Treatment of Gastric Crises.—O. Foerster of Breslau calls attention to the fact that the gastric crises of tabes are always ushered in by the pain, and that this may persist alone for some time before vomiting and hypersecretion occur. The trouble is evidently the resul of morbid irritation of the sensory nerves of the stoma probably the seventh to the ninth spinal roots. He reports case of gastric crises in a syphilitic man of 47. During the two of the six years since they began they have been tically continuous, the vomiting keeping up for three at a time, with intervals of only five or six days when, morphin, he was able to retain food. No treatment ga lief until Foerster advised resection of the nerve roots, he regarded as the source of the disturbances, and Kü[illegible] sected the seventh to the tenth dorsal roots. The day the operation the patient called for food and retained i there has been no vomiting and no more pain in the region during the two months since the operation. The ca reported in the *Allg. med. Central-Zeitung,* April 3, 1909.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

535 Dearborn Avenue . . . Chicago, Ill.

Cable Address . . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*For other information see second page following reading matter*]

SATURDAY, SEPTEMBER 25, 1909

THE RELATION OF THE SPIROCHÆTA PALLIDA TO GENERAL PARALYSIS

The *Spirochæta pallida,* concerning the etiologic rôle of which in syphilis there now is no question, has been demonstrated in chancres, syphilids, the tissues in cases of congenital syphilis, gummas, and in a few cases of syphilitic aortitis, but in so-called parasyphilitic disease, *e. g.,* general paralysis, it as yet has not been seen. By means of the Wassermann reaction, however, chemical changes peculiar to syphilis have been demonstrated in the blood serum of individuals suffering from general paralysis and locomotor ataxia and on this account the question arises as to the exact relation between the spirochete and parasyphilitic diseases. For the purpose of illuminating certain phases of this problem Browning and McKenzie[1] call attention to the points of resemblance between syphilis and trypanosomiasis. The principal points are: In trypanosomiasis the infecting agent is a protozoon, and this, they say, probably also is the case in syphilis; in experimental trypanosomiasis there occurs a change in the blood serum resembling that in syphilis and parasyphilitic diseases and manifesting itself by giving the Wassermann reaction; there is considerable similarity in regard to the early involvement of the lymph glands; the early febrile and constitutional disturbances with eruptions, the periods of latency, and the later involvement of the central nervous system, roughly correspond fairly well in the two diseases; and then the cellular changes are the same in both—lymphocytes and plasma cells playing a prominent part in the reaction, the perivascular proliferation of general paralysis being similar to that in sleeping sickness, which is the final stage of human trypanosome infection. In sleeping sickness, however, trypanosomes occur in the cerebrospinal fluid; and the failure to demonstrate the spirochete of syphilis in general paralysis is an important missing link in the chain of comparison. It is also noteworthy that, while both diseases may be transmitted to animals, yet the mode of natural infection in the case of syphilis is far different from that in the case of trypanosome infection, which is conveyed by a biting fly *(Glossina palpalis).*

In spite of the failure so far to find *Spirochæta pallida* in the cerebrospinal fluid in general paralysis there are a number of points that may be considered to speak in favor of the contention that it is still active in this disease. Thus general paralytics appear to be immune to syphilis reinfection. It will be recalled that Krafft-Ebing failed to inoculate with material from a typical hard chancre nine general paralytics who had no history of syphilis. Naturally this might be interpreted as the result of immunity to syphilis, but Neisser has shown experimentally that in monkeys reinfection is impossible if the spirochete is still present. The occurrence of a latent period between active syphilis and so-called parasyphilitic diseases has also been explained as the result of an acquired immunity, but it is also explainable in other ways. The early and effective use of drugs may cause a complete disappearance of the symptoms of syphilis, but apparently without killing the organisms completely, because the disease may reappear after some time; and a mother who gives birth to syphilitic children without herself showing the symptoms undoubtedly harbors the virus. Hence it is not unlikely that the germ of syphilis may remain latent in the body for long periods and yet be capable of giving rise to disturbances on the occurrence of favorable changes concerning the exact nature of which we know little or nothing.

It has been claimed that failure to respond to antisyphilitic treatment speaks for the view that general paralysis is not a true syphilitic disease. Here, again, the possibility that the virus may have become serum-resistant, or drug-resistant, a condition which is now well known in experimental trypanosomiasis, should not be lost sight of. Assuming that the spirochete may occur in the cerebrospinal fluid in general paralysis, Browning and McKenzie suggest that antisyphilitic treatment may not be effective in this disease on account of impermeability of the spinal membranes, which are held to be more or less impermeable not only to bacterial antibodies, but also to certain drugs, as, for instance, potassium iodid.

In view of these considerations these authors feel that the independence of syphilitic and parasyphilitic disease has not been established and that, especially in general paralysis, search for the organism of syphilis should be continued. They also suggest that, in view of the likelihood that the disease is the result of an active process, intraspinal injections of remedial agents might be tried.

A PHYSICIAN'S DAUGHTER

With the passing of Sarah Orne Jewett some time ago there went a sterling American writer who portrayed affectionately and to the life "the dry, shrewd, quick-witted New England type." She was born "down East" in Maine, the daughter of a country doctor. Making the rounds with her father amid the New England folk, she learned to know, to respect and to love them, and no one has done greater honor than she to the homespun virties, the sharp humor and the real kindliness beneath the sometimes bleak exterior of the country folk of Maine and of New England generally. She was a true artist, seeking not to produce effects, but to reproduce character and life as she saw it. What she has written will live, then, doubtless for generations after much of the present-day writing that seeks merely after effect and does not go below the surface of things has been forgotten.

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[1] Review of Neurology and Psychiatry, June, 1909.

We who are physicians can scarcely help but feel that she owed much to her intimate relations with her father that enabled her to get so near the heart of truth in life. Indeed, she as much as says so herself. "You doctors ought to be our historians," says a character in her novel, "A Country Doctor," "for you alone see the old country folk familiarly and can talk to them without restraint." Doubtless there is more than one reminiscent, if not biographic touch in this appreciative sketch of the country physician who joined knowledge of personality and of human nature to his skill in diseases, which last grew to be "a wonderful second-sight." Such, for instance, is this: "The doctor told Nan many curious things as they drove about together: certain traits of certain families, and how the Dyers were of strong constitution, and lived to a great age in spite of severe illnesses and accidents and all manner of unfavorable conditions; while the Dunnells, who looked a great deal stronger, were sensitive, and deficient in vitality, so that an apparently slight attack of disease quickly proved fatal. And so Nan knew that one thing to be considered was the family, and another the individual variation, and she began to recognize the people who might be treated fearlessly, because they were safe to form a league with against any ailment, being responsive to medicines, and straightforward in their departure from or return to a state of health; others being treacherous and hard to control, full of surprises, and baffling a doctor with their feints and follies of symptoms; while all the time Death himself was making ready for a last, fatal siege; these all being representatives of types which might be found elsewhere."

The great body of country physicians in America may well be proud of Miss Jewett and her work because it shows their attitude toward humanity in so sympathetic a light.

INTERNATIONAL CONFERENCE ON VITAL STATISTICS

The successful completion of the labors of the International Commission for the Revision of the Classification of Diseases and Causes of Death is highly gratifying to all those interested in uniform, complete and accurate vital statistics. It also marks a degree of uniformity and cooperation hitherto unattainable in this work. For many years, attempts were made in the old International Statistical Congress to formulate a classification of diseases that could be universally accepted. These efforts, however, were not successful, and until comparatively recently each nation and, in the United States, practically every city and state, followed its own methods in compiling mortality statistics. Consequently one could never be certain on examining a statistical table whether the figures given were in any way comparable to those found in other reports.

The first definite attempt at a solution of the problem was made at the session of the International Statistical Institute at Chicago in 1893, when Dr. Jacques Bertillon submitted a system that has since become recognized as the International Classification of Causes of Death. In 1898 at Ottawa, the American Public Health Association formally adopted this classification and recommended its use in all national, state, provincial and city reports in the United States, Canada and Mexico. The committee of that association at that time recommended a decennial revision in order that the classification might be kept up to date. This recommendation was approved by the International Statistical Institute, and in 1900 the French Government called the first meeting of the international commission at Paris. Unfortunately for the progress of vital statistics in the United States, however, medical men and registration officials were not represented, and as a result the revision was not in all ways satisfactory. The delegates to the second decennial revision, however, were admirably chosen, and it is anticipated that their work will help to solve the problems of vital statistic registration in this country.

Particularly gratifying is the recognition given the medical profession and the American Medical Association in the selection of three representative physicians, one of them the chairman of the Association Committee on Nomenclature and Classification of Diseases, to represent the United States on the International Commission. The work of Dr. Foster and his associates is of the utmost importance and is deserving of the recognition which has been accorded it.

TREATMENT OF PELLAGRA

Much interest has been aroused during the last two or three years in the subject of pellagra. A study of the disease in the United States has thus far shown that it is widely distributed throughout the south, and is present in some localities in the north and middle west. The question of prognosis and treatment is naturally, therefore, one of much interest. Dr. C. H. Lavinder,[1] of the U. S. Public Health and Marine-Hospital Service, who for more than a year has been devoting his time to a study of the disease, in a recent article, has given a brief review of the subject.

He states that the prognosis must invariably be considered as grave, and that complete recovery can seldom be assured. Reliable statistics on the subject in the United States are practically limited to asylum cases, and give a mortality of 67 per cent. It must be borne in mind, however, that asylum cases are undoubtedly the more advanced and hopeless ones, and for that reason will give a mortality much above the average. Lombroso gives statistics of hospital cases in Italy in 1883 and 1884, showing a mortality of 13 per cent., whereas Wollenberg gives Italian statistics for 1905 showing a mortality of a little over 4 per cent. The disease resembles tuberculosis, both in that it is an insidious and chronic condition, and that much depends on early diagnosis and treatment, prognosis in early cases being far better than in advanced ones. The importance of this is apparent when it is considered that the disease is an intoxication, and that it is probably associated with diseased corn products used as food.

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[1] Public Health Reports, Sept. 10, 1909. Copies of this article can be obtained by making request to the Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

Predisposition is believed to be an important factor in this disease. Lowered physical resistance, worry, insufficient food, bad housing and alcoholism are supposed to render an individual more susceptible. In Italy, laws have been passed regulating the use and storing of corn and its derivatives, institutions have been established for the care and treatment of pellagrins, improved agricultural methods are encouraged, and assistance is given to the sick in many ways by the government.

In the treatment of patients, Lombroso recommends a liberal diet; in some cases he uses baths and cold douches, believing them to be of benefit in certain cases with nerve and skin manifestations; he has found arsenic a valuable remedy, and sodium chlorid of service.

Good results have been reported from the use of arsenical preparations, and transfusion of blood from cured individuals to the sick has been tried with apparent success.

THE UNSATISFACTORY CANADIAN PATENT MEDICINE ACT

On another page[1] we give the essential features of the new Canadian "Act Respecting Proprietary and Patent Medicines." A careful perusal of this act will leave the impression that the law has been framed with a view rather to appeasing public clamor than to furnishing public protection. The law defines "proprietary or patent medicine," in the sense in which the terms are used in the statute, as any artificial remedy or prescription whose name, composition or definition is not to be found in the various pharmacopeias or approved formularies or—and herein lies "joker" number one—which has not the "true formula or list of medicinal ingredients, which must not contain cocain," printed on the label or wrapper. This would seem to mean that nostrums of the most dangerous and objectionable type would not come under the jurisdiction of the new act, providing they contained no cocain, and their ingredients were published on the label. That is to say, such nostrums as Peruna and Orangeine, whose manufacturers claim to publish the "formulas," would not be "patent medicines" within the meaning of the new Canadian law! Nor is this the only weakness in the new statute. A poison schedule is given and any "patent medicine" containing one of the scheduled drugs must have the name of such drug—nothing is said of the quantity—"conspicuously printed" on the label and wrapper. Provided, however—"joker" number two—that if the manufacturer tells the authorities the quantity of any such scheduled drug his nostrum contains he may be permitted to sell his "patent medicine" without printing the name of this drug on the label "if it appears to the minister that the proportion of the drug used is not dangerous to health"! The potentiality for harm of this provision is limited only by the judgment of the man to whom is entrusted the enforcement of the act. It would seem that the new law will actually protect the Canadian public against cocain-containing nostrums; but from the innumerable other vicious forms of self-administered medicaments the act seems to offer tempting opportunities for the unscrupulous manufacturer to profit at the expense of the people. It may be that if the law is broadly interpreted and wisely administered our northern neighbors may obtain that measure of protection which they evidently desired; should it be enforced, however, with that slavish adherence to the letter, rather than to the spirit, that too often characterizes the execution of laws, we fear that Canadians will soon awaken to the fact that their representatives have handed them a legislative "gold-brick."

Medical News

CALIFORNIA

Will Teach Tropical Medicine.—The faculty of Oakland College of Medicine has instituted a chair of tropical medicine, the first occupant of which is Dr. Creighton Wellman.

Hospital Notes.—The San Jose General Hospital was formally opened to the public September 3.——Plans have been completed for the new St. Francis Hospital, San Francisco. The building, equipment and furniture will cost about $200,000, and will be under the direction of Drs. John Gallwey, Walter B. Coffey, Wallace I. Terry, John H. Graves and Malcolm O. Austin.

New Medical Department Opens.—A meeting of the assembly was held September 8, for the formal assimilation of Cooper Medical College, San Francisco, with Leland Stanford, Jr., University. The address of the occasion was delivered by Dr. Henry Asbury Christian, Dean of Harvard Medical School, on "A Career in Medicine and Present-Day Preparation for It." Dr. Henry Gibbon spoke on behalf of the corporation of Cooper Medical College and President David Starr Jordan on behalf of the university.

Personal.—Irving Hardesty, Ph.D., of the University of California, has been appointed professor of anatomy in Tulane University, New Orleans.——Dr. Harold A. Miller has been elected president and Dr. Lewis W. Stidham, secretary, of the board of health of Alameda.——Dr. William A. Weldon, San Pedro, Dr. John F. Spencer, Gardena, and Dr. Pierronnette, Wilmington, have been appointed assistant health officers of Los Angeles county.——It is announced that Dr. Wallace I. Terry, San Francisco, chief surgeon of the Emergency Hospitals, will resign to take effect October 30.——Dr. Henry C. McClenahan, for six years superintendent of the Gardner Sanitarium, Belmont, has resigned, and will go to Europe for a year.

GEORGIA

Tuberculosis Clinic for Negroes.—A clinic and dispensary for the treatment of tuberculosis among negroes was opened August 3 in Atlanta, with Dr. J. Ansley Griffin in charge, and Drs. Julius E. Sommerfield and Wesley E. Taylor as assistants.

Personal.—Dr. Harry H. McGee was appointed city physician of Savannah, ad interim, vice Dr. Lawrence Dee, resigned, September 1, and Dr. B. H. Gibson was elected city physician September 8.——W. D. Sloan, Milltown, and Jack Standifer, Blakely, have been appointed by the governor beneficiaries of scholarships at the Medical College of Georgia, Augusta.

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[1] Pharmacology Department, this issue.

ILLINOIS

Bequest.—By the will of Lawrence McMahon of Urbana, St. Elizabeth's Hospital, Danville, receives a bequest of $700.

Presentation to Dr. Greene.—On September 11, Dr. James L. Greene, recently appointed alienist of the State Board of Control, was called to the amusement hall at Kankakee State Hospital and presented with a diamond shirt-stud by the employees and a silver fruit dish and grape shears by the heads of the departments.

Personal.—Dr. Frank Parsons Norbury, Jacksonville, formerly resident physician of the Pennsylvania Institute for the Feeble-Minded, assistant physician of the Jacksonville State Hospital, and later proprietor of a private sanitarium in Jacksonville, was appointed superintendent of the Kankakee State Hospital, September 16, vice Dr. James L. Greene, resigned.——Dr. Francis W. Barton and family, Danville, sailed for Europe, September 22.——Dr. Carl J. F. Rochow, physician in charge of the Illinois Asylum for Feeble-Minded Children, Lincoln, has resigned.——Dr. Karl F. Snyder, Freeport, has succeeded Dr. John F. Fair, resigned, as local surgeon to the Illinois Central Railroad.——Dr. C. R. Spicer, Springfield, was elected national medical examiner of the Yeomen of America, September 17.

Chicago

Personal.—Drs. E. Fletcher Ingals, George E. Shambaugh and W. E. Buehler have returned from Europe.——J. B. Gookin, city chemist, resigned September 17, to take a similar position in the state food laboratories.—Dr. Robert H. Gault has been appointed instructor in psychology in Northwestern University.

Medical College to Open.—The opening exercises of the College of Physicians and Surgeons, the College of Medicine and Surgery of the University of Illinois, will be held September 28, in the college assembly hall at 8 p. m. Dr. William Allen Pusey will deliver the opening address.

Sources of Infection.—The chief of quarantine and disinfection of the health department has made investigation to determine the sources of infection of cases of scarlet fever and diphtheria reported during the week ended September 18, and finds the following to be the most prominent factors:

> Association with unrecognized case at school—10 cases. Association with a case in the immediate vicinity—20 cases. "Following a *cold*"—*only* a predisposing factor, if true. More likely, the first signs of the illness were taken for a "cold." And here is where a danger lies to the patient and the community. At the playground. By coming in contact with mild undeclared or convalescing cases—4 cases. From unreported case—3 cases. Insanitary premises, only a predisposing factor. Previous case in family—2 cases.

It is always association with a previous case, in one way or another. The largest number of cases are found to originate from other cases in the immediate vicinity, and here the blame falls directly on the parties concerned.

IOWA

No Signs for Physicians' Homes.—It is reported that medical men of Des Moines are planning a campaign for the elimination of physicians' cards or signs from their residences.

Personal.—Dr. O. B. Hawley, Corning, received painful injuries in a fall from an automobile, September 1.——Dr. Smith A. Spillman, Ottumwa, who was operated *on*, August 26, for the removal of gall-stones, is reported to be securely convalescent.——Dr. Louis B. Carson, Maquoketa, has been seriously ill with septicemia due to an operation wound.——Dr. Robert J. Nestor has been elected health officer of Waterloo, vice Dr. Guilford H. Sumner.

KENTUCKY

Donation to Sanatorium.—Hon. R. T. Lightfoot, Paducah, and Superintendent Will Thompson of the McCracken County Sanatorium, have donated to the county the concrete material and rough lumber necessary for the erection of a tuberculosis hospital at the county poor farm.

National Guard Appointments.—Dr. Charles W. Hibbitt, Louisville, has been promoted from captain and assistant surgeon to major and surgeon of the First Infantry; Dr. George H. Day has been commissioned captain and assistant surgeon in the same organization.——Dr. Thomas C. Holloway, Lexington, has been commissioned major and surgeon.——Dr. Lee C. Redmon, Lexington, has been commissioned captain and assistant surgeon and assigned to duty with the Second Infantry.

MARYLAND

Fountain Dedicated.—At Middletown, on September 11, a public drinking fountain was dedicated, the gift of Dr. S. Philip Appleman, Braddock Heights, in memory of his deceased parents.

State Society Meeting.—The semi-annual meeting of the Medical and Chirurgical Faculty of Maryland was held at Braddock Heights, September 15. In his presidential address, Dr. George M. Linthicum, Baltimore, took issue with the national referee board as to the harmlessness of benzoate of soda. The association is making plans to use its influence in the next legislature in behalf of a pure food, drug and beverage law; a slaughter-house and meat inspection law; a dairy and cow inspection law; a law providing for the state care of the insane; a midwifery law; adoption of the Crede method of prevention of ophthalmia neonatorum, and provision for an appropriation for hospital and medical schools and for the library and hall of the faculty.

Baltimore

Personal.—Dr. Robert Talbott Miller, Baltimore, has been appointed surgeon in chief of St. Francis Hospital, Pittsburg.——Dr. Benjamin Frayser has been appointed resident physician of the Pottsville (Pa.) Hospital.——Dr. Charles Metcalfe Burns has been appointed instructor in Johns Hopkins Medical School.

MICHIGAN

New University Planned.—A plan is proposed to amalgamate the Detroit College, Detroit College of Law and the Detroit College of Medicine and Surgery into an institution to be known as the University of Detroit.

Personal.—Dr. Henry W. Stiles of the University of Michigan has been appointed assistant professor of anatomy in Tulane University, New Orleans.——Dr. Edward V. Howlett, Trimountain, a member of the staff of the Copper Range Consolidated Mining Company, has resigned.——Dr. Nelson R. Gilbert, Bay City, has been reelected for the seventh time president of the board of control of the Home for Feeble-Minded and Epileptics, Lapeer.

MISSISSIPPI

Tuberculosis Camp to be Permanent.—The trustees of the Mississippi Insane Hospital, Jackson, have decided that the tuberculosis camp established there during Governor Vardaman's administration, shall be made permanent.

Personal.—Dr. W. R. Card, for six years assistant physician at the East Mississippi Hospital for the Insane, Meridian, has resigned to take effect October 1, and will move to Biloxi.——Dr. William W. Mathis, Orwood, has been appointed a member of the State Board of Health, vice Dr. Robert A. Seale, Holly Springs, resigned.

NEW MEXICO

Sanatorium Improvements.—The Cottage Sanatorium, Silver City, is erecting an administration building to provide the necessary accommodations for the medical and business staffs of the institution.

Do Not Wish Names Mentioned.—At the meeting of the Santa Fe County Medical Society, August 26, the secretary was instructed to request editors of local papers to prevent the appearance of the name of any physician in connection with the announcement of sickness and accidents of any person in the community.

Medical Society Organized.—The Pecos Valley Medical Society was organized in Roswell, August 31, with thirteen charter members and the following officers: Dr. J. E. Caldwell, Hagerman, president; Dr. O. R. Haymaker, Roswell, vice-president; Dr. Frederick J. Walters, Roswell, secretary-treasurer, and Drs. David H. Galloway, Roswell, Frederick F. Doepp, Carlsbad, and William W. Phillips, Roswell, censors.

NORTH CAROLINA

Pellagra in State Hospital.—Dr. James McKee, superintendent of the State Hospital for the Insane, Raleigh, reports the presence of 14 cases of pellagra in the institution.

Medical Colleges Open.—The seventeenth annual session of the North Carolina Medical College, Charlotte, opened September 8, with about 100 students in attendance.——The eighth annual session of the University of North Carolina Medical School, Raleigh, began September 8. The new members of the medical faculty are Dr. Watson S. Rankin, professor of general hygiene and preventive medicine; Dr. John S. McKee, demonstrator of obstetrics; and J. M. Harper, assistant demonstrator of pathology. A free out-patient *clinic* is to be conducted in connection with the school.

NEW YORK

Health Department at State Fair.—Arrangements have been made for an extensive exhibit illustrating the work done by the State Department of Health to be placed in the State Fair to be held in Syracuse on September 13 and subsequent days.

Tuberculosis Exhibitions at Fairs.—The State Charities Aid Association and the State Department of Health are once more cooperating in a joint campaign for the prevention of tuberculosis. Exhibits will be sent to 42 county fairs this fall.

Need of an Alcoholic Ward.—The vice-president of the State Prison Commission, in a report on the city prison in Raymond street, Brooklyn, complains of lack of accommodation for the care of persons suffering from alcoholism. It is absolutely impossible under present conditions to do them justice. He suggests that an alcoholic ward be installed in the Cumberland Street Hospital as soon as possible.

Superintendent of Hospital Responsible.—Attorney General O'Malley has advised the secretary of the board of trustees of the State Hospital for Tuberculosis, Raybrook, that the treasurer of the institution is not responsible for the defalcation of about $9,000 discovered last June in the accounts of the purchase clerk, and that as the purchase clerk was subordinate to Superintendent Garvin and his agent, and as the custody of the funds was placed in the superintendent's charge by the law, he was personally liable for the amount of the defalcation.

New York City

For Crippled Children.—The Darrach Home for Crippled Children has received $10,000 from the estate of the late Benjamin Ellis Martin.

Steamers Held at Quarantine.—The steamer *Martha Washington* from Patras and Palerma was held up at quarantine because of a case of smallpox in the steerage.——The steamer *Neapolitan Prince* from Rotterdam was also detained at quarantine for a thorough inspection.

For Tuberculous Children.—The Board of Education is making an effort to provide for tuberculous children and for those who may become tuberculous if not given proper care. They have asked for money to fit up twenty practically open-air school rooms for these children. Classes for the blind have also been established in connection with the public schools.

Reception to Pole-Finder.—On September 14, at a meeting of representative medical men of Brooklyn, in which the medical societies of Brooklyn and Long Island were represented, a committee composed of Drs. Walter B. Chase, Elias H. Bartley and Alfred Bell was appointed to tender a public reception to Dr. Frederick A. Cook at such a date as may suit his convenience.

Money for Charity.—The will of Michael Horn leaves bequests to forty-three charitable and philanthropic institutions. Among the larger bequests are $5,000 to Mount Sinai Hospital; $2,500 to the Montefiore Home; $500 each to the Flower Hospital, J. Hood Wright Hospital, German Hospital, Nursery and Child's Hospital, and Sydenham Hospital; and $750 each to Blackwell's Island Hospital, Beth Israel Hospital, Home for Aged and Infirm Hebrews and Jewish Hospital, Brooklyn.

Buffalo

Medical Examiners of Schools.—The acting health commissioner, Dr. Francis E. Fronczak, has appointed the following medical examiners for public schools: Dr. Franklin W. Barrows, District A; Dr. William C. Callanan, District B; Dr. David E. Wheeler, District C; Dr. Arthur C. Schaefer, District D, and Dr. Daniel V. McClure, District E.

Maternity Department in General Hospital.—Work which has been under way for several months at the Buffalo General Hospital for the perfection of a maternity ward, has been completed, and the city now has a modern obstetric department in which patients will be cared for by nurses specially trained for this class of work. Several nurses connected with the hospital who were sent to New York for a course of study at the Sloane Maternity, have now returned properly equipped for the care of cases in the ward.

District Society Meeting.—The fourth annual meeting of the Eighth District Branch of the Medical Society of the State of New York was held in Buffalo, September 8, and the following officers were elected: President, Dr. Edward Munson, Medina; vice-presidents, Drs. Thomas H. McKee, Buffalo, and John S. Wright, Perry; secretary, Dr. Carl S. Tompkins, Buffalo, and treasurer, Dr. Charles A. Wall, Buffalo. The society adopted resolutions urging the city of Buffalo to build a new isolation hospital at the earliest possible moment.

OHIO

Cocain Sellers Fined.—G. W. Reese and Manie Strauss, druggists of Cleveland, charged with the illegal sale of cocain, are said to have been found guilty and fined $700 each. The prosecution was undertaken by the State Board of Pharmacy.

Sanatorium Notes.—The commissioners of Clark, Champaign, Madison and Greene counties met in Springfield, August 27, and purchased for $35,000 the Hazelwood Place as a site for a joint tuberculosis hospital. The formal transfer was made on September 4.——The Ohio Sanatorium Company has sold its Columbus property known as Park View Sanatorium for $27,500 to the Protestant Hospital Company.

Personal.—Dr. Joseph C. Placak, for several years medical director of the Tuberculosis Sanatorium of the Department of Charities of the City of Cleveland, Warrensville, has resigned, to take effect October 1.——Dr. Charles H. Browning, Oberlin, who has been ill in the Cleveland Hospital, has returned much improved in health.——Dr. Frank C. Chvatal has been appointed city physician for the sixteenth district of Cleveland, vice Dr. John A. Hurt, resigned.

Elections.—At the annual election of the Stark County Medical Club at New Berlin, Dr. James Fraunfelter, Canton, was elected president, and Dr. Olivia G. Ricksecker, Wilmot, secretary-treasurer.——A Medical Library Club has been organized at Columbus, which will install and maintain a medical library in the public library. The following officers were elected: Dr. David N. Kinsman, president; Dr. Charles J. Shepard, vice-president; Dr. T. O. Fred Fletcher, secretary-treasurer, and Drs. Francis W. Blake, James F. Baldwin, John H. J. Upham, and William J. Means, members of the executive committee.

OREGON

Case Not Bubonic Plague.—After careful examination to determine the disease from which John McCarthy died at Portland, August 8, Dr. Ralph C. Matson, who has conducted the investigation, announces that he had found no positive signs of plague. He believes the case was one of septicemia.

Dedicatory Services.—The Bishop Morris Memorial Chapel in the new addition to the Good Samaritan Hospital, Portland, erected at a cost of $115,000, has been formally dedicated by Bishop Scadding. The addition to the hospital is a memorial to the late Right Rev. B. Wistar Morris, formerly Bishop of Oregon.

Personal.—Dr. Henry C. Jefferds, Portland, is reported to be critically ill with cerebral hemorrhage in the Good Samaritan Hospital.——Dr. Esther C. Pohl, Portland, is reported to be ill in St. Vincent's Hospital.——Dr. William Kuykendall, Eugene, has been elected grand physician by the executive council of the Women of Woodcraft.——Dr. Calvin S. White, who has been seriously ill in St. Vincent's Hospital, is reported to be convalescent.

PENNSYLVANIA

Memorial Tablet Unveiled.—A mural bronze tablet in memory of the late Dr. John Fay was presented and unveiled at the Altoona Hospital, September 16. Dr. William H. Howell presided and Dr. William S. Ross made the presentation of the tablet. The tablet was accepted by H. J. Cornman on behalf of the board of trustees of the hospital.

Personal.—Dr. William J. Davidson, physician to the Pressed Steel Car Company's works, McKee's Rocks, was severely wounded in the neck and arm during the recent labor riots.——Dr. George W. Carr has been appointed associate ophthalmologist to the Wilkes-Barre City Hospital.——Drs. Thomas G. Jenny and Henry Klinzling have been reappointed members of the Pittsburg Typhoid Fever Commission.

Unused Hospital to Be Opened.—St. Margaret's Memorial Hospital, Pittsburg, which was completed ten years ago, but remained unused because no funds had been provided for its maintenance, will be opened early next year, as the interest on the bequest now amounts to a sufficient sum to justify the opening of the institution. The building was originally erected by money from the Shoenberger estate, but as a provision of the will required that it be operated as a strictly sectarian institution, it was thus cut off from state aid.

Aids for the Decrease of Infant Mortality.—In the bulletin of the Department of Health and Charities of September 5, attention is drawn to the small number of deaths of children under 5 years of age, as compared with that of one year ago, namely, 2,004 children during the summer of 1909, or 14 per cent. less than during the summer of 1908. In 1908 the mortality was 2,341 children during the summer months. As many of these deaths were due to improper feeding and poor ventilation, Director Neff is anxious that the Philadelphia Alliance for the Care of Babies, the Board of Education, Home School League and allied societies who commenced in the late spring to educate the young mother in the care of the baby in hot weather through lectures and home visitations should continue these demonstrations during the winter, and ask for volunteers in this life-saving work. There are many private schools in the city in which a smaller allowance per cubic feet of air space for each pupil is provided than is required in the tenement houses in the slum districts.

Philadelphia

College of Physicians Nearly Completed.—The new building for the College of Physicians at Twenty-second and Ludlow streets, which is practically completed, is to be formally opened November 10. The library of 300,000 volumes has already been installed, and the lecture, reading and reception rooms are receiving their finishing touches.

Personal.—Drs. Ross H. Skillern, Milton B. Hartzell, Theodore H. Weisenburg, R. R. Sinclair, Henry W. Cattell and Edward Martin have returned from Europe.——Dr. Paul G. Weston has been appointed pathologist at the Municipal Hospital.——Dr. Frank N. Yeager has been appointed physician to the health department and detailed by Dr. Neff to study infantile mortality and its causes.

Medical Colleges Open.—The annual opening of the Medico-Chirurgical College was held September 23.——The eighty-fifth annual opening of Jefferson Medical College was held September 24, and the annual address was delivered by Dr. J. W. Holland, dean of the faculty.——The exercises introductory to the session of 1909 and 1910 of the Woman's Medical College of Pennsylvania were held at the college September 22.

Class Reunion.—The class of 1885 of Jefferson Medical College announces its intention of holding a reunion in Philadelphia about April 2, 1910, on the occasion of the twenty-fifth anniversary of the graduation of the class. Members of the class are requested to communicate with Dr. Joseph D. Orr, class president, 215 Second street, Leechburg, Pa., and thereby facilitate the necessary arrangements for this social function.

Patients Benefited at the City's Farm for the Insane.—The result of the first year's work at the city's farm for the mildly insane has been highly satisfactory. More than a year ago the Byberry farm of 878 acres was purchased and a large number of the mildly insane patients formerly housed in the insane department of the Philadelphia Hospital were transferred to Byberry. The work on the farm has been executed by the insane patients and the receipts from vegetables and crops raised on the farm will aggregate $10,000. The principal object sought, namely, the improvement of the patients, and the pure air and steady exercise has brought about most excellent results. In some instances patients have been restored to mental health. Fifty patients are being treated at the farm at the present time and accommodations will be made later on for all those who can be trusted in outdoor work. Dr. Howard E. Bricker is in charge.

TENNESSEE

Pellagra Contagious.—At a meeting of the Tennessee State Board of Health, September 14, it is reported that it was decided to order the isolation of all cases of pellagra, the board expressing the opinion that the disease is communicable.

Tuberculosis Ward to Be Built.—It is proposed to erect a separate tuberculosis ward to be known as "The Boyd Memorial Tuberculosis Ward," in connection with the Knoxville General Hospital, in memory of the late Dr. John Mason Boyd.

Personal.—Dr. Frank S. Raymond, Memphis, is reported to be critically ill at the Ranch Sanatorium in Lincoln, N. M.——Dr. Ebb C. Johnston, Chattanooga, who had a cerebral hemorrhage at Hot Springs, Ark., August 16, has been brought home and taken to Erlanger Hospital.

Medical Schools Open.—Vanderbilt University, Nashville, opened for its annual session September 22.——The new medical college formed by the union of the medical departments of the University of Tennessee and the University of Nashville opened for its initial session September 12. Dr. Henry S. Morris has been elected to the chair of genitourinary diseases in the college.——Chattanooga Medical College opened for its twentieth annual session September 23.——The medical department of Lincoln Memorial University, formerly known as the Knoxville Medical College, will open for the year, October 1.

WASHINGTON

Hospital Annex.—The addition to St. Joseph's Hospital, Bellingham, the foundation of which has already been completed, is to be two stories in height and will cost $45,000.

Sanitaria Burn.—Two upper floors of the Kearney Sanitarium, Spokane, were burned September 4. The nine patients in the building were removed without injury.——The private sanitarium of Dr. Charles B. Alexander, Malton, was totally destroyed by fire, September 8, with a loss of about $5,000.

Rush Alumni in Washington.—At the recent meeting of the Medical Association of the Pacific Northwest, the Rush Medical College Alumni Association of the State of Washington was organized, and the following officers were elected: President, Dr. Samuel J. Holmes; secretary, Dr. Frederick Bentley; and treasurer, Dr. Edward P. Fick.

Tuberculosis.—King County Antituberculosis League appeared before the Seattle council finance committee, September 3, asking an appropriation of $30,000 for the carrying on of the additional antituberculosis campaign during the coming year.——King county has given up the attempt to establish a camp for tuberculosis in the suburb of Tukwila, as the mayor protested and threatened arrest to any one who attempted to install a camp in that place.

WISCONSIN

To Erect Sanatorium.—The Wisconsin Council of the Improved Order of Red Men, at its annual convention in Galesville, August 12, decided to build a tuberculosis sanatorium in Douglas county, to cost $7,000.

Personal.—Dr. John F. Brown, physician at the state penitentiary, Waupun, has been appointed superintendent of the State School for the Blind, Janesville.——Dr. Louis Breitzmann, Menasha, is said to have been declared insane, and committed to the Northern Hospital for the Insane, Oshkosh.——Dr. J. P. Williams, formerly of Dodgeville, who was arrested at Janesville on the charge of practicing medicine without a license, is said to have been discharged on proving his registration.

Women Physicians Organize.—The Wisconsin Medical Women's Society was organized at Oshkosh recently, and the following officers were elected: President, Dr. M. Adeline Riddle, Oshkosh; vice-president, Dr. Anna S. B. Corr, Juneau; secretary, Dr. Minnie M. C. Hopkins, Oconto; and treasurer, Dr. Johanna M. Droppers, Milwaukee, and board of censors, Drs. Luella E. Axtell, Marinette, Belle Painter Nair, Port Atkinson, and Ella Chaffee-Fay, Whitewater. The next annual meeting will be held in Milwaukee.

GENERAL NEWS AND COMMENT

New Medical Journal.—The latest aspirant for honors in the field of medical journalism is the *Journal of the National Medical Association*, an association with a membership limited to colored physicians, dentists and pharmacists. The journal is published quarterly at the Tuskegee Institute, Alabama, and is creditable in every way.

Personal.—Dr. Juan Guiteras has consented to remain as director of sanitation and chairman of the National Board of Health for Cuba, as the government has now appropriated sufficient funds for the work of a department of sanitation.——Dr. Charles E. Ruth, Ponce, Porto Rico, formerly of Keokuk, Iowa, is said to have been mulcted in damages of $20,000 recently, for leaving a piece of gauze in the abdomen after abdominal section.

Mississippi Valley Medical Association.—The thirty-fifth annual meeting of the Mississippi Valley Medical Association will be held in the Southern Hotel, St. Louis, October 12-14, under the presidency of Dr. John A. Witherspoon, Nashville, Tenn., and gives promise of exceptional excellence, both from a scientific and a social view-point. Dr. Sherman G. Bonney, Denver, will deliver the oration in medicine, and Dr. John B. Deaver, Philadelphia, the oration in surgery. Among the interesting topics for discussion at this meeting are exophthalmic goiter, pellagra, and uncinariasis. The St. Louis Medical Society is the host of the association, and has made extensive plans for the entertainment of its visitors.

Individual Drinking Cups.—The Illinois Central Railroad is making arrangements to place individual drinking cups in all coaches of every description over the entire system. These cups will be placed in slot machines beside the water cooler, but will not displace the glass or free cups heretofore in use.——The Chicago and Northwestern Railroad has acceded to the request of the Iowa State Board of Health to abolish public drinking cups on all their trains in the state. The company has informed the secretary that it will place sanitary paper cups on sale in its cars.

BUDAPEST LETTER

(From Our Special Correspondent)

Budapest, Sept. 7, 1909.

International Medical Congress

[An account of the scientific proceedings of the Congress will be found in the Department of Society Proceedings.]

The eventful week is over. No longer are Congress badges to be seen on the breasts of thousands of strangers hurrying to and fro. Budapest has returned to its normal state of existence. It was with some apprehension that I returned to the capital of Hungary for another congress; but to-day it is a satisfaction to be able to record the solid progress that has been accomplished. When last at Budapest the press representatives had to threaten to go on strike before any sort of facilities could be obtained; while, on the present occasion, all they asked was immediately granted. But in the interval the medical press has been organized into an international association. The demands now made are no longer the sometimes querulous and divergent exigencies of isolated individuals; they embody what the authorized representatives of the medical press, after meeting and discussing, agree to be necessary.

Modern Hungary and Scientific Progress

The Congress of 1894 was the first attempt made on a large scale to show that Hungary desired to join the comity of self-governed nations and was now attempting to play its part in the advance of universal science. For this reason it seems to be of the greatest interest to hark back and compare the Congress of 1894 with that of 1909, and see what has been accomplished by the childhood of a new nation.

In one sense, Hungary may claim to be an old nation. It is old enough to have been conquered and overrun by the Mongols in 1241. After recovering from this invasion, and till the all-conquering Turk came in 1541, there may be said to have been a kingdom of Hungary. That kingdom was shattered by the Turkish domination, which lasted 150 years. Finally the Germans helped to drive the Turks away and Hungary became attached to the Hapsburg dynasty and had no regular existence of its own till the restoration of a separate Hungarian constitution in 1867. Hungary then ceased to be a part of the Austrian Empire and the Austrian Emperor was solemnly crowned king of Hungary. Consequently, whatever shortcomings there may be, there is a tendency to plead, as an excuse, that Hungary has only been an independent nation for a very short time. Hungary, however, was more free before the constitution was proclaimed than is generally admitted, and is not so free, since 1867, as the patriotic Hungarian would make believe. In any case, it is hard to place much faith in the freedom of a country where only a very small proportion of the inhabitants have the right to vote. It is true, however, that modern methods of existence are spreading to Hungary. It is no longer an exclusively agricultural country. In 1869 the proportion of the population engaged in industrial pursuits only amounted to 4.19 per cent. of the total. This proportion had increased to 13.5 per cent. in 1900. In 1880 there were only 1,197 workshops, factories, etc., employing more than 20 workmen, and in 1900 there were 2,474 such establishments. The railway lines in 1869 measured 2,736 kilometers, while in 1901 their length amounted to 17,274 kilometers. This rapid economical development, rather than mere political modification, better explains the awakening interest of Hungary in all that relates to the progress of science, whether it be medicine, hygiene or chemistry.

Congress Rivalries

The question now naturally arises whether the difference between the Budapest Congress of 1909, when compared with the Congress of 1894, corresponds in due ratio to the growth of the nation as illustrated by the statistics given above. To imagine that such congresses are purely scientific meetings is of course a complete illusion. A government and a municipality do not spend large sums of money merely for the abstract love of science. Though the Congress was organized only for medical men, many of its members are official delegates of the governments of their respective countries, act under direct instructions from the minister of foreign affairs of their country, or are officials holding high positions in administrative services. This indeed complicates the situation. Thus, at Budapest, instead of planning to organize a congress where the discussions should be of the greatest possible use, therefore limiting the number of papers and members so as to secure the highest quality of contributions, the object, on the contrary, was to attract the largest possible crowd and to produce a dazzling effect. There were eighteen sections of the last Congress which met at Lisbon three years ago; then there must be twenty-one sections at Budapest. There were close on 3,000 members inscribed for the Lisbon Congress; then there must be 4,000 or 5,000 members for the Budapest Congress. Brilliant receptions and festivities were held at Lisbon; then something far more vast and extravagant must be done at Budapest. It is all very well to talk of medicine and of science, but first of all the world must be taught to admire Magyar magnificence and be made to realize that henceforth Hungary is worthy of a more important place in the comity of nations. Of course the Congress is not political, but all the same the above were the predominating considerations. Now, in such endeavors, it must be admitted that, in 1894, the Hungarians were not altogether successful. There were, on that occasion, about 2,500 members. The sections were very badly attended, though they contrived to carry more than a hundred different resolutions. But what marred the effect of the Congress was the admittance of a great number of irresponsible individuals. It would be better if local individuals should be made to pay an entrance fee four or five times higher than the members who come from abroad, as the former have but slight or no traveling expenses to bear. In 1894, a great crowd, who had little or nothing to do with hygiene, paid the $4 entrance fee, and in exchange participated in banquets, excursions, etc. On the other side must be placed the abundant hospitality shown, the excellent deportment and refined manners prevailing at some of the private receptions, the wonderful and pleasurable excursions organized, and the great cordiality displayed on every occasion by the Hungarian hosts towards their foreign guests.

The Present Congress

To-day there is a distinct improvement. Either things have been better managed, greater care has been taken regarding people admitted to the Congress, or better manners have been acquired in the lapse of fifteen years. In any case, during the Congress just terminated, while difficulties arose, mainly due to the fact that visitors were too numerous, there was no behavior of a character likely to compromise the dignity of the Congress. There is another important step forward to be recorded. The Hungarians have recognized that this is above all the century of social legislature. The creation at the universities and faculties of a chair of medical social science was urged by more than one speaker. The literature distributed by the local organizing committee was all intended to show that Hungary feared to be thought backward in this good cause. There was one volume describing the poor relief and the hospitals of Hungary. Another volume dealt with the sanitary services of the country, a third with the care of childhood, and a fourth with the treatment of the insane. Then the minister of public worship and public education, Count Albert Apponyi, sanctioned the issue, at the public expense, of a large and elaborately illustrated volume describing the faculties of medicine of Budapest and of Kolozsvar. A copy of this ponderous volume was given to all the members of the Congress. Like the other smaller books, it is printed in French, so that the great majority of the members will be able to read and understand this very notable effort to show that Hungary desires to take rank in regard to higher education and the social legislation. Unfortunately, much remains to be done. Misery is widespread among the people. Medical relief is not so readily forthcoming as a perusal of these books might lead a casual observer to imagine. For a population of 19,900,000 there were in 1906 only 5,370 physicians, 12,800 midwives, and 2,204 dispensing chemists. This was equal to 26.4 doctors, 62.9 midwives, and 11.3 dispensing chemists for every 10,000 inhabitants. There were during the same year 443 hospitals containing 37,545 beds where 366.200 patients had been treated or 815 patients per hospital. Altogether, there had been 11,182,000 days of treatment, which equals 2.2 hospitals and 1,789 days of treatment for every 100.000 inhabitants. Thus Hungary only stands in regard to hospital accommodation on a level with Galicia, Bukovina, Dalmatia and the most backward provinces of the Austrian Empire. But it is improving. For instance the statistics of the year 1902 show that there were 21.4 doctors, 40.5 midwives, and 9.7 dispensing chemists per 10,000 inhabitants. Comparing these with the similar figures just given for the year 1906 it will be seen that the increase is very considerable for so short a period as four years. But if the figures as to the wages earned by the population are investigated, then we shall wonder how and by whom these medical practitioners can be paid. In the rural districts the agricultural laborers earn $60, $80 and $100 per annum. In the United States I have seen these same men merely working as day laborers and yet earning as much in a day as they were able to obtain in their own country as the reward of a whole week's work.

The Archduke and the Right to Happiness and Health

Bearing these facts in mind, I was not a little startled by the speech with which the Archduke Joseph inaugurated the Congress. He said: "To be at the service of humanity, to consecrate all the physical forces and intellectual faculties that God has given us, to the well-being of our fellow-men, remains always the ideal object of our existence. We cannot do without the help of others, and the individual value of each man augments in due measure as his work is more profitable to other individuals or to humanity at large."

Therefore a man is to be estimated not according to the fortune he amasses for himself, but in accordance to his usefulness to others. The Archduke went on to say:

"What is true in regard to a person is still more true in regard to an entire profession. In this respect all equitably minded people must recognize that there are few professions exercising on the individual, or on the family, and, as a last consequence, on the whole life of states, an influence so profound and so widespread as that of the medical profession.

"Every living being has the desire and the right to be happy, and this for as long a time as possible. And it is no new truth that the fundamental condition of happiness on this earth is a healthy, satisfied and long life."

I could not help asking myself how were the toilers of Hungary to be satisfied and live a long healthy life on $2 a week. But the Archduke had said they had a "right" to be happy. Therefore they have a right to work and to receive a minimum wage which shall be high enough to provide what is necessary for health and happiness. An agitator proclaiming these principles at a street-corner meeting would run the risk of being roughly treated by the police. At the ceremonial opening of the congress a ready response was given to the Archduke by Professor Landouzy, dean of the Paris Faculty of Medicine, president of the French delegation and representative of the ministry of public instruction and fine arts of the French Republic. The most perfect silence prevailed, for Professor Landouzy's oratory is justly popular. I will endeavor to translate the passage which may be taken as a reply to the Archduke's remarks:

"Numerous are the reasons which have attracted so many colleagues to Transleithania. It is not only the renown of your thinkers, of your artists, of your scientists. It is not only the peaceful beauty and then the torrent force of your Danube, or the wealth of your Tisza, from whose banks flow your wines which are of gold in color and in value. Nor were we attracted by the souvenirs and the monuments of your glorious city. We came to see what you show with justifiable pride: the palaces, the libraries, the schools, the museums, the institutions which you have consecrated to the worship of the Arts, the Sciences and Charity. You are proud and rightly so of your institutions for the relief of the poor, for the spread of education and the spirit of human solidarity by which you desire that throughout Hungary the practise of medicine, having henceforth become as much the art of preventing as of curing illnesses of the mind and of the body, shall be exercised with more justice so that, to promote the psychical and physical health of the people, there shall be a better distribution of material and moral well-being among individuals and collectivities."

Professor Landouzy proceeded to allude in terms perhaps more flattering than the facts justify to the fall in the death rate of Budapest and how the working class were better housed. In this respect considerable improvement has been effected; but terrible conditions still prevail and much yet remains to be done.

From Budapest to Washington

Thus it will be seen that in spite of all efforts to help these congresses on the neutral ground of pure science, there is no preventing the overlapping, I will not say of party politics, but of the higher considerations of policy bearing at least indirectly on practical legislation. If this is so for a medical congress, this must be more emphatically the case at the hygiene congresses. Therefore, all these details and explanations will, I trust, be of use in view of the next great international assembly which is to be held next year in the United States. The Fifteenth International Congress of Hygiene and Demography is to meet at Washington a year hence, and there many questions of social reform must be discussed. There will be great debates on what the French call the "laws of human solidarity;" and it is to be hoped that the description of the congress just terminated at Budapest will [illegible] help in preparing for next year's [illegible]

(*To be continued*)

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Sept. 4, 1909.

Men of Feeble Constitution in the Army

According to the law of 1905, men summoned to military service are divided into three classes: (1) those fit to bear arms; (2) those who have good constitutions, but are excluded from the armed service because of some infirmity (excessive myopia, deformed feet, etc.), and who cannot possibly be used except in the auxiliary clinical service; (3) those who are sometimes called semi-fit; that is to say, those who have no definite physical defect, but whose feebleness of constitution is a bar to their bearing arms. The law was passed in the belief that regimental life might assist many of this last class to perfecting their physical development; therefore these men, at the end of a year of service, undergo a second examination as to their fitness to bear arms. The medical statistics of the army show that in regard to almost all affections the morbidity of the recruits is often twice, and sometimes more than twice, the morbidity of the soldiers who have undergone twelve months of service.

Now, to confine these "doubtful recruits," whose number is more than 20,000 a year, to clerical work, as is frequently done, is not to favor their physical development at all, but to destroy their usefulness for the defense of the country. What again would be realized, on the contrary, if these enfeebled men, instead of being treated as supernumerary clerks, were developed into real soldiers! With this idea in mind, some officers have constituted in the regiments platoons of the weaker recruits, who are put under a special regimen of work and of food, under the joint direction of officers and of the physicians of the corps. Serious difficulties, however, were encountered from the first, and the results were far from meeting expectations. The regimental medical service, already overworked, has not sufficient time to give to the weaker men; and their presence in the regiments is detrimental to the healthy men. At present, physicians and colonels are agreed in condemning the system of regimental platoons of weaklings.

An army physician, Dr. Solmon, has had the happy idea of withdrawing these soldier candidates from their regiments and of bringing them together at special points on the seacoast or in the mountains, chosen solely for hygienic reasons. The objections to the regimental platoons do not apply to these formations. They do not require much extra expenditure—a slight increase in nourishment and perhaps some expense for hygiene—and in return they permit much economy in respect to hospital treatment. No doubt only part of these semi-fit recruits will become sufficiently strong at the end of a year to become real soldiers, but even if only a half or only a quarter are so much improved, that would be 5,000 or 10,000 more men a year for the defense of the country. Even if the result is not completely attained from the military point of view, still the men will be returned to their families more vigorous than at their arrival in the regiment, and will have learned good habits in these schools of hygiene, which they will be ready to disseminate. The idea of platoons of invigoration (*pelotons de robusticité*), then, has a much higher purpose than merely the increase of our effective military forces. Its application would result in the marked physical regeneration of a large part of the population.

Illegal Practise of Pharmacy

Not all pharmacists practise their profession personally. There are, in fact, large pharmacies whose proprietors employ a great number of non-pharmacist clerks, who are engaged in the preparation of medicines. This being the case, the Paris medical society (*Syndicat Médical de Paris*) has just passed a resolution that the inspectors should exact that in conformity to the law, the preparation of medicines be carried out exclusively by graduate pharmacists in all the laboratories and manufactories of pharmaceutical products, and that all infractions of the law be severely repressed.

The society also has called attention to the anomaly in pharmaceutical studies, in that the pharmaceutical student, before entering on his theoretical studies, undergoes an apprenticeship in a laboratory, being entrusted with the preparation of medicines; while in all the other professions, the practical stage in general follows the theoretical studies, and is, so to speak, their consummation. The society, therefore, has passed a resolution that the apprenticeship ought to be at the end of the pharmaceutical course.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Sept. 1, 1909.

Naunyn's Seventieth Birthday

September 2 Professor Naunyn celebrates his seventieth birthday. Considering the great eminence in medical science of this renowned investigator, both at home and abroad, his birthday without doubt will be observed by many of his former pupils and colleagues. In his scientific success and in his entire personality, Naunyn may be reckoned among the classicals of medicine. In his keen criticism, his incorruptible love of truth and his excellent disposition, he is excelled by no one. Naunyn was born in Berlin. He was for a long time an assistant of Frerich, and in 1869 became professor of internal medicine at Dorpat, later at Bern and at Königsberg, and in 1888 went to the newly founded Kaiser Wilhelm University of Strasburg. His principal investigations are in the field of metabolic diseases. His work on diabetes mellitus and on the clinical relations of cholelithiasis are standards in medical literature. He was one of the founders of the *Archiv für experimentelle Pathologie und Pharmakologie* and of the *Mitteilungen aus den Grenzgebieten der Medizin und Chirurgie* (Communications from the Borderland of Medicine and Surgery). Five years ago he retired from the faculty of the university and betook himself to his villa near Baden-Baden. He has, however, not taken leave of his scientific work. Not only does he take part in medical congresses, but since his retirement he has published several works, among others a new edition of his monograph on diabetes. His last work is a spirited treatise on the general pathology and therapy of old age in the "Text-Book of Diseases of Old Age," published by Professor Schwalbe.

International Exhibition of Hygiene in Dresden in 1911

In 1911 there will occur a great exhibition of hygiene in Dresden, for which preparations are even now being energetically pushed forward. The king of Saxony will assume the protectorate of the exhibition. At the head of the honorary presidents are Prince Bülow and the present imperial chancellor. Koch, Behring, Ehrlich, Rubner and others belong to the honorary committee. The scientific management is in the hands of Weber, a member of the imperial board of health.

Left-Handedness in the Army

A short time ago a military surgeon presented to the army medical society the results of his studies on the occurrence of left-handedness in the army. He examined 300 left-handed soldiers. At least half of these came from families in which this peculiarity also occurred in other members; it appears to be twice as frequent among males as among females. Enuresis, feeble-mindedness, stuttering and other disturbances of speech occur much more frequently among left-handed than among right-handed people. The frequency of left-handedness is greatest among the recruits and diminishes with the length of service. The speaker reaches the conclusion that the left-handed are both physically and mentally less suited to military service than the right-handed.

Assistance of Physicians in Prussia

The arrangements existing in Prussia in previous decades for the assistance by physicians of their colleagues who are in want were considerably extended by a law passed in 1899. By this law each medical council, or *Aerztekammer*, was authorized to exact a yearly contribution to cover the expenses of the assistance bureau from the physicians in the district who are entitled to a vote. If the contribution was not voluntarily paid, compulsory collection could be enforced. From the contributions obtained in this way, most councils appropriate a sum for the assistance of physicians in need, and such aid has of late years become quite extensive. In 1908 the Berlin-Brandenburg medical council appropriated $12,000 (50,000 marks) for purposes of aid, and of this sum about $11,000 (46,000 marks) were expended; the assets of the assistance bureau at the end of 1908 were about $95,000 (395,000 marks). The bureau collects from every physician entitled to vote a fundamental tax of $2.50 (10 marks), and from all with a total income above $12,000 (50,000 marks) an additional sum of 5 per cent. of the state income tax. Besides these assistance bureaus of the medical councils, there are in Prussia a number of private aid societies which annually pay large sums to colleagues who are without means. For widows and orphans there are special funds provided; that of the *Leipziger Verband* is especially extensive and receives annually many voluntary contributions from the members.

VIENNA LETTER

(From Our Regular Correspondent)

VIENNA, Sept. 9, 1909.

The International Association of the Medical Press

The occasion of the International Congress was utilized for two other congresses. The one was the otologic congress, the other a convention of the International Association of the Medical Press. The latter discussed a project, prepared by the British section, which is thought will bring order into the present chaotic conditions of modern congresses. It is proposed to select an international committee to arrange everything in regard to congresses and to secure by proper payment the services of a reliable permanent international secretary, who would have to devote all his time to this work. Then the press could also obtain within a very short space the abstracts of all papers read in English, French and German, perhaps also in Italian, which was officially recognized at this congress as one of the congress languages. Dr. Dawson Williams (London) seconded this motion which was adopted, and London was selected as the place of the next congress, to be held in 1913.

The Otologic Congress

The Otologic Congress held its sittings on three days, and some good work was done. Of the papers read the following may be mentioned: Alexander (Vienna) read a report on "Suppurative Labyrinthitis" in which he recommended great care before deciding to operate; he does not operate unless the acute stage is over or when there is indicatio vitalis. Barany (Vienna) read a paper on "New Methods of Examination of the Hearing." Neumann (Vienna) spoke on the bacteriology and pathology of brain abscess and meningitis. Professor Denker (Erlangen) discussed the "Pathologic Changes in the Inner Ear of Deaf-Mutes." The Lenvall prize for the best work in otology was awarded to Drs. Neumann (Vienna) and Gray (Glasgow) together. Dr. Neumann's prize-winning work was on "Local Anesthesia in Otology," and the monograph "Suppurative Labyrinthitis." The next otologic congress takes place in 1912 in Boston.

Reform of Midwifery

Dr. von Haberter, who was appointed a short time ago to the post of chief inspector of health, is directing his main efforts toward a reform of the midwifery act now in force. The most important of the features of a bill prepared by his advice is the lengthening of the curriculum of the midwives from six months to two years. Of these twenty-four months, six are to be devoted to preliminary and theoretical, eighteen to practical instruction. The present regulations in many places permit any woman to call herself a midwife without having obtained any proper teaching at all. The want of midwives, especially in the poorer mountainous districts, is very keen; especially as medical help in such places is still less available, and therefore, the authorities have not been very strict. But now it is intended to put into each village inhabited by at least 200 families a midwife with full qualifications, unless there is a doctor in the place. The study of midwifery must be conducted in one of the special midwifery clinics (five proposed, of which three are already present). An examination must be passed, which will entitle the woman who has reached the required number of marks to a diploma in midwifery. Frequent surprise visits by the district officers of health are also planned, in order to see that all sanitary regulations are followed out by the midwives. Puerperal fever among the cases in the charge of one woman is to incapacitate her for a period of eight days after her last visit there, and special stress is laid on the necessity of the quarantine in the instruction given to them. Every year at least one "midwives'-day" or local congress will be held by the chief officer of health of the district, to inform them of any important facts dealing with midwifery. Meanwhile the necessity of instructing the present working midwives in modern asepsis and antisepsis, the nursing of infants, the value of breast-feeding, and the routine use of Credé's instillations of silver nitrate or another silver preparation into the eyes of the new-born is urgent, and instructors are few. The women without diplomas are, therefore, offered an opportunity to obtain at least the fundamental principles of this work through so-called *Wanderlehrer* (migrating teachers) sent out to the smaller places. After a certain time (two years are considered too short) only qualified matrons will be allowed to take up this kind of work. It is estimated that, while the costs of these reforms will not amount to more than $150,000 a year, the saving to the public will be more than treble this figure.

Pharmacology

Canadian Act Respecting Proprietary or Patent Medicines

The act passed by the Canadian government regulating the sale of proprietary or "patent medicines" requires that every manufacturer or importer of such medicines shall, before offering them for sale, procure from the Department of Inland Revenue a certificate of registration. The application for this certificate must be accompanied by a list of the medicines to be covered and also by the fee of one dollar. The following are important sections of the law:

"All proprietary or patent medicines shall be put up in packages or bottles, and every one of these, intended for sale or distribution in Canada, shall have placed on it, in conspicuous characters forming an inseparable part of the general label and wrapper, the name and number under which the medicine is registered, with the words, 'The Proprietary or Patent Medicine Act,' and also the manufacturer's name and address. . . .

"No proprietary or patent medicine shall be manufactured, imported, exposed, sold or offered for sale (a) If it contains cocain or any of its salts or preparations; (b) if it contains alcohol in excess of the amount required as a solvent or preservative, or does not contain sufficient medication to prevent its use as an alcoholic beverage; (c) if it contains any drug which is included in the schedule to this act but the name of which is not conspicuously printed on, and an inseparable part of, the label and wrapper of the bottle, box or other container: Provided that every manufacturer or importer of or agent for the sale of any medicine containing any of the drugs mentioned in the schedule may, when applying for a certificate of registration for any medicine, transmit to the minister an affidavit specifying such drug and the proportion of it contained in the mixture and dose, and the minister may thereupon grant a certificate of registration for such medicine without the printing of the name of the said drug on the label and wrapper if it appears to the minister that the proportion of the drug used is not dangerous to health.

"No person, firm or corporation shall distribute or cause or permit to be distributed from door to door, or on a public place or highway, or through the mail, any sample of a proprietary or patent medicine: Provided this section shall not prevent manufacturers or wholesale dealers distributing samples to the trade.

"No manufacturer, importer or vendor shall in any advertisement or in any other manner, assert or indicate that the certificate of registration issued by the minister passes on the merits of any proprietary or patent medicine, and no reference to such certificate, or to any other certificate or guarantee, other than by this act specially provided, shall be made in any advertisement, on any label on the package or bottle in which such medicine is contained, or in any other manner. No proprietary or patent medicine shall be imported, exposed, sold or offered for sale in Canada which bears any representations as respects certificates issued under any Canadian or foreign governments different from that allowed under this Act.

"The Governor in Council may . . . add to or remove from the schedule to this Act any poisons or potent drugs, as from time to time he deems expedient, and notice thereof shall be given in the *Canada Gazette*."

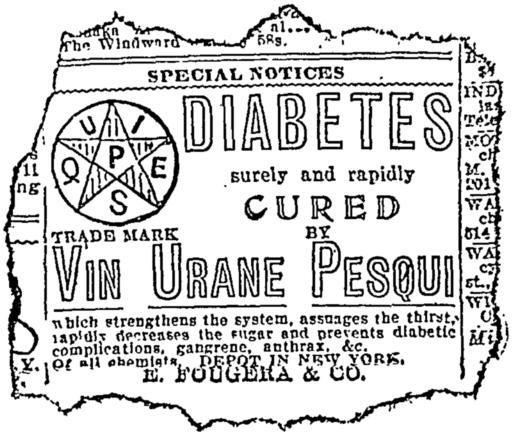
The schedule of drugs previously referred to includes the following remedies: Acetanilid and other coal-tar products; aconite and its preparations, arsenical preparations, atropin, belladonna and its preparations, cantharides, carbolic acid, chloral hydrate, chloroform, conium and compounds thereof, corrosive sublimate, cotton root, croton oil, digitalis and derivatives, ergot, essential oil of mustard, ether, hellebore, heroin, hyoscyamin and its preparations, Indian hemp, morphin and its preparations; nux vomica and derivatives; opium, its preparations and derivatives; pennyroyal, phenacetin, prussic acid, savin and preparation thereof, strychnin and its preparations, sulphonal, tansy, tartrate of antimony and veratrum. It is announced by the authorities that provision prohibiting sale of medicines containing cocain will be rigidly enforced.

A proprietary or "patent medicine" is defined in the act as follows: "'Proprietary or patent medicine' means every artificial remedy or prescription manufactured for the internal use of man, the name, composition or definition of which is not to be found in the British Pharmacopeia, the Codex Medicamentarius of France, the Pharmacopeia of the United States or any foreign pharmacopeia approved by the minister, or any formulary adopted by any properly constituted pharmaceutical association representing the Dominion of Canada, approved by the minister; or on which is not printed in a conspicuous manner, and forming an inseparable part of the label and wrapper, the true formula or list of medicinal ingredients, which must not contain cocain or any of its derivatives or preparations."

"Patent" versus "Ethical Proprietary" Medicines

To the Editor:—The enclosed clipping appears on page 11 of the *New York Herald* for Sept. 9, 1909. The ludicrousness of the paper appeals to my sense of humor. It assails so-called vivisection with a venom equaled only by its ignorance of the facts of animal experimentation, yet it submits its readers to such obviously dangerous and untrue statements as appear in the enclosed advertisement. Such inconsistency makes one distrust the self-vaunting publication in which it appears.

Harold S. Arnold, M.D., New Haven, Conn.



SPECIAL NOTICES

DIABETES

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VIN URANE PESQUI

which strengthens the system, assuages the thirst, rapidly decreases the sugar and prevents diabetic complications, gangrene, anthrax, &c.
Of all chemists. DEPOT IN NEW YORK.
E. FOUGERA & CO.

Comment: The advertisement to which Dr. Arnold refers is here reproduced. It will be noticed that this particular nostrum is another of the "cures" handled by Messrs. E. Fougera & Co. Fougera & Co. was one of the firms that put themselves on record as being opposed to the work of the Council on Pharmacy and Chemistry when that body was first created. One of the preparations which this firm advertises to the public is "Santal Midy." "Cures in 48 hours," the advertisements used to read, but since The Journal called attention to the fact that promising to cure gonorrhea in two days was rather a large order, this has been modified—in American advertisements—to "relieved in 24 hours." We find in Australian newspapers, however, that "Santal Midy" still "cures in 48 hours."

Deterioration of Galenicals

Notwithstanding the general belief that drugs deteriorate readily it is true that the ordinary alcoholic preparations of alkaloid-containing drugs are fairly stable. Dr. A. R. L. Dohme (*American Druggist and Pharmaceutical Record*, July 26, 1909), has investigated the rate of deterioration for a number of galenical preparations by assays made at specified intervals. The stock was exposed to light and from it small amounts were repeatedly taken, so as to imitate the conditions prevailing in the ordinary retail drug store. Practically none of the products examined had deteriorated to any appreciable extent, while in such as had, the deterioration came well within the limit of experimental error. The exceptions to this are powdered extract of physostigma, fluidextract of coca, fluidextract of aconite root, and the tincture of aconite root, after a half-year's standing.

The deterioration in the case of tincture of aconite root was not great enough to affect its therapeutic value markedly. Strange to say tincture of coca was found not to deteriorate, in which respect it differed from the fluidextract. Contrary to general belief nitroglycerin tablets were found to be quite stable.

Correspondence

Purification of Water by Ozone

To the Editor:—An interesting editorial on the purification of water by ozone appears in The Journal, August 21. In the closing paragraph appears the following:

"To justify the introduction of any new system of water purification, even though it be one of recognized efficiency, the question of comparative cost should be presented in such a way as to convince reasonable inquirers. This has not yet been done with the ozonization process."

May I be permitted to draw your attention to the fact that in America data are available covering the comparative costs of ozonization and sand infiltration. The Murphy Cold Storage & Ice Company of Detroit have for over two years been sterilizing water by ozone, and they have found that it cost 4 cents for electric energy for 50 tons of water sterilized.

At Lindsay, Ontario, an ozone purification plant has been in operation since last October purifying the entire water supply of the town, amounting to about one million gallons a day. The entire cost of purification, including pre-filtration, is 44 cents a million gallons. The plant has proved so efficient that the town has decided to double its capacity in order that all the water entering the mains, even during the time of conflagration, may be ozonized. When this change is made the cost of operation will probably be under 44 cents a million gallons.

At Lindsay, Ontario, electricity is fairly cheap—$35 a horsepower year. Electricity, however, can be made in any part of the United States for 1 cent a K. W. hour. This includes interest charges and maintenance. The cost of ozonizing a million gallons of water, stated in electric units, is 100 K. W. hours per million gallons. These costs, which have been obtained in actual practice, are far below those of any European system of ozonization.

Concerning costs of installing a municipal water purification plant, these will naturally vary with local conditions, but, generally speaking, an ozonizing plant, including rough filters for straining out the suspended matter from the water prior to ozonization, will be about $15,000 per million gallons daily capacity.

The comparative cost, then, of ozonization and filtration may be roughly set forth as follows:

INSTALLATION COST

Slow sand filter plants, average for the United States, $30,000 per million gallons daily capacity.

Ozonization plants with pre-filters, $15,000 per million gallons daily capacity.

OPERATING COST

Average of slow sand filters in the United States, $5 per million gallons.

Average of ozonization at one cent per K. W. hour, including pre-filtration, $1.40.

In neither of these cases are interest and maintenance charged. The 40 cents added to the cost for ozonization is the cost of pre-filtration, and ordinarily this cost is less than 20 cents per million gallons.

It may interest you to know that ozonizing plants are now in process of construction at Baltimore, to have a capacity of ten million gallons a day, and at Ann Arbor, with a capacity of three million gallons a day. These plants will be in operation, the former during the present month, and the Ann Arbor plant in October.

James Howard Bridge.

The Section on Pharmacology and Therapeutics

To the Editor:—We naturally expect the American Medical Association always to set the best example to the profession, and to uphold the modern and scientific conception of medicine. Yet it has now a Section bearing the antiquated, injurious and unscientific title of "Section on Pharmacology and Therapeutics." Why not drop "and Therapeutics" and term it "Section on Pharmacology" simply, as the Section on Surgery dropped "Anatomy"?

In the case of the Section on Pharmacology, there are stronger reasons for omitting "Therapeutics," as this is misleading and inaccurate.

1. Therapeutics, in medical parlance, implies something more than the administration of drugs. It includes all remedial measures used with patients—surgical, psychic and mechanical—as well as pharmacal. Yet the present title of the Section is so slip-shod and unscientific as to create the impression that there is no other therapy than pharmacotherapy.

2. The justification for all the new-fangled, non-professional systems of healing is found in this erroneous use of the term "therapeutics." All these healers want to escape the incidence of the medical registration laws by claiming that, as they do not use drugs, they do not require to be licensed to practise. And even some judges have been so ill-informed as to declare from the bench that the practise of medicine is the administration of drugs, or so-called medicine, and that those who use no drugs are not medical practitioners! Hence the correct definition of medical practise is obstructed by the perpetuation of the incorrect use of the term "therapeutics" by certain colleges and the public. This confusion of words and ideas is extremely detrimental to legitimate medical practitioners; and therefore it should not be endorsed, upheld and perpetuated by the American Medical Association.

3. There is no proper connection—and this is most important—between pharmacology and therapeutics in modern and scientific medical teaching. The logical relation of therapeutics is to internal medicine or to surgery, as the case may be, but not to materia medica. A scientific teacher holding the chair of pharmacology will not imitate the herbalists and dispensatories by telling his class that such a drug is good for this and that disease. He has nothing to do with diseases or pharmacotherapy. His business is to teach all about the drug in question and its physiologic action—its pharmacodynamics; and he should leave the student who is well informed in regard to the physiologic action of drugs to exercise his own reasoning powers in judging of the cases in which they should be selected for administration. This is the method of that most praiseworthy institution, the Council on Pharmacy and Chemistry. And, if pharmacology were taught thus, we should get rid of a whole host of useless and ineffective drugs, while the list stored in the new graduates' minds would be compact and valuable and the action of every article would be fully understood.

If the Section's name means "Section on Drug Therapeutics," it should say so. But the term "pharmacology" is description enough; for, in fact, the Section has no business to enter the field of therapy at all, if its true function be to discuss pharmacology in a scientific spirit.

W. P. Whery, M.D., Fort Wayne, Ind.

Binocular Spacial Pole

To the Editor:—I wish to announce that on September 4 I discovered the binocular spacial pole, a discovery of much importance in the study of binocular single vision and binocular rotations. In the near future I hope to report fully on the matter.

G. C. Savage, Nashville, Tenn.

Use of Appendix to Splice the Ureter

To the Editor:—The article on splicing the ureter, by Dr. Harvey P. Jack in The Journal (Aug. 28, 1909, liii, 717) prompts me to report the results of some experiments of my own, carried on in the experimental laboratory of Tulane University during 1908.

In a series of experiments undertaken on dogs to find some satisfactory method to splice or graft a damaged or diseased ureter, the appendix was used in a limited number with the following results: While the transplantation and anastomosing could be easily done, infection of the kidney invariably followed in from one to three weeks and ultimately caused the loss of the animals. Various means were resorted to to clean the inside of the appendix; it was swung out of the cavity and copiously flushed, but, as was to be expected, cleansing by this method was impossible.

Some of the transplantations were done with the appendix attached to its mesentery, others with division. In these latter some of the appendices sloughed. In all cases in which leaking at points of suture did not occur or no sloughing occurred the appendix invariably became converted into a pus sac and infection of the kidney followed. Certain anatomic differences exist between the appendix of the dog and that of the human being; in the dog it is nearly the size of the small intestine, but that this would make any difference in causing the infection is doubtful. An organ more likely to succeed in being used to replace sections of the ureter is the Fallopian tube; this has been suggested by several workers in this line but as yet not demonstrated practically.

Carroll W. Allen.

Clinical Instructor in Surgery, Tulane University, New Orleans.

Queries and Minor Notes

Anonymous Communications will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

HYDROGEN PEROXID CONSIDERED AN ACID

To the Editor:—Under New and Nonofficial Remedies, in The Journal, Aug. 7, 1909, liii,, 460, sodium peroxid is mentioned as "the sodium salt of hydrogen peroxid." From this it is evident that hydrogen peroxid is considered an acid. If so, for the sake of right and scientific nomenclature, H_2O_2 should be called "hydrogen acid" and Na_2O_2 "sodium hydrogenate" (?), but this is, of course, nonsense. Therefore it seems to me hardly possible to consider Na_2O_2 as a salt.

I must confess that I studied inorganic chemistry more than twenty years ago, but I have studied it under direction of the famous Professor Mendelejeff of St. Petersburg, who impressed on his students thorough understanding of the fundamental principles of chemistry and, as far as I can remember, he never mentioned even a possibility of such a compound as peroxid of sodium.

Therefore, I take the liberty of asking if Na_2O_2 is really a chemical compound and, if so, whether it is properly classified as a salt.

G. N. Pinegin, M.D., Yonkers, N. Y.

Answer.—While hydrogen peroxid does not turn litmus paper blue, does not appear to neutralize aqueous solutions of alkaline hydroxids, nor does it liberate hydrogen when its aqeous solution is treated with zinc as will ordinary acids, it nevertheless does possess certain properties which characterize it as an acid and which justify the statement that sodium peroxid is the "salt" of hydrogen peroxid. Elaborate researches demonstrating the acidic nature of hydrogen peroxid have been made by Bredig (Ztschr. f. Elektrochem., vii, 622). Marcuse and Wolffenstein (Ber. d. deutsch. chem. Gesellsch, xxxiv, 2430) and others, have also studied the question. Alexander Smith, professor of chemistry at the University of Chicago, in his "General Chemistry for Colleges," says: "Hydrogen peroxid, in solution in water, is a feeble acid. As an acid it enters into double decomposition readily, and the peroxids are really salts in which the negative radicle is O_2''. Thus, when hydrogen peroxid is added to solutions of barium and strontium hydroxids, the hydrated peroxids appear as "crystalline precipitates." Modern chemistry prefers, instead of the terms nitric acid, sulphuric acid, hydrochloric acid and hydrosulphuric acid, the terms hydrogen nitrate, hydrogen sulphate, hydrogen chlorid and hydrogen sulphid; hence the term hydrogen peroxid is in accord with chemical nomenclature.

THE USE OF "OUGHT" AND "SHOULD"

To the Editor:—I much regret that, in my criticism (The Journal, Sept. 11, 1909, liii, 883) of the word "ought," as used by Dr. Keen, I appeared to you "somewhat hypercritical," for to be so was far from my intention.

I certainly agree with you that the derivation of a word should have some weight in determining its meaning; but, for modern literary purposes, there is no more reason why we should go back five centuries to Chaucer's time for our most approved diction than there is why we should draw on him for our spelling. In view of what you say of Dr. Harbin's criticism, I think you will agree with me that very few words exist that have exactly the same practical application; for it must be remembered that every word has a life-history, and that its meaning, in virtue of the law of utility and of definite expression, and not for the sake of convenience, as you seem to think, has been so modified in many instances, as by this time to bear little or no resemblance to what it originally was. If this were not so, we should actually be facing the uncomfortable dilemma, which you suggest, of having on our hands two such frequently used words as "should" and "ought" with the very same meaning.

It strikes me that if every public writer would strive to follow the plain advice which is said to have been given by the polished literary artist, Flaubert, to Maupassant, namely, that "whatever may be the thing one wishes to say, there is but one word for expressing it, only one verb to animate it, and only one adjective to qualify it," there would be less indiscriminate use of words like "ought" and "should," and fewer offenses against good style.

Thomas J. Mays, Philadelphia.

The Public Service

Medical Department of the Army

Changes for the week ended Sept. 18, 1909:

Freeman, C. E., capt., ordered to accompany troops from San Francisco, to Fort Niagara, N. Y.

Hollester, R. H., cont. surgeon, ordered to Fort Omaha, Nebr., for duty.

Morse, A. W., major., now on leave of absence, ordered to accompany 29th Inf., from San Francisco, to Fort Jay, N. Y., on completion of this duty to resume leave status.

Ewing, C. B., Kendall, W. P., Banister, W. B., Bradley, A. E., Willcox, Chas., Frick, E. B., Keefer, F. R., and Raymond, T. U., majors, ordered to report on Oct. 11, 1909, to Lieut. Col. H. P. Birmingham, president examing board, Army Medical Museum Bldg., Washington, D. C., for examination to determine their fitness for promotion.

Jones, E. C., M. R. C., granted leave of absence for 10 days.

Cook, G. W., M. R. C., granted leave of absence for 10 days.

Marvin, M. F., M. R. C., relieved from duty at Fort Mansfield, R. I., and ordered to proceed to his home and report to The Adjutant General of the Army for further orders.

Slater, E. F., M. R. C., relieved from duty at Fort Adams, R. I., and ordered to Fort Mansfield, R. I., for duty.

Shillock, Paul, major., having been found physically incapacitated for active duty, is relieved from duty at Fort Sheridan, Ill., and will proceed to his home to await retirement.

Wall, F. M., M. R. C., relieved from duty at Fort Oglethorpe, Ga., and ordered to Fort Michie, N. Y., for duty.

Brechemin, Louis, Jr., capt., granted leave of absence for 4 months, on arrival in the United States.

Stuckey, H. W., M. R. C., ordered to Fort Hamilton, N. Y., for duty; granted leave of absence for 2 months.

Purviance, W. E., major, Bosley, J. R., capt., and Waring, J. B. H., lieut., will proceed to San Francisco, in time to take the transport sailing for the Philippine Islands about Nov. 5, 1909.

LaGarde, L. A., lieut. col., detailed as member of examining board at the Army Medical Museum Building, Washington, D. C., vice Crosby, W. D., lieut. col., relieved from duty on this board.

Waring, J. B. H., lieut., will accompany troops en route from transport *Thomas*, to Fort Porter, N. Y., and return to his proper station; on completion of this duty granted leave of absence for 10 days.

Duncan, L. C., capt., granted leave of absence for 1 month.

Freeman, C. E., lieut., will accompany troops en route from the transport *Thomas*, to Fort Porter, N. Y., and return to his proper station; granted leave of absence for 20 days.

Bowman, M. D., M. R. C., will report to the C. O., Fort Miley, Cal., for temporary duty during absence of Lieut. Freeman.

Truby, A. E., major, will accompany insane patients from San Francisco, to Washington, D. C., and report to the Adjutant General for orders to return.

Suggs, Frank, M. R. C., ordered to Fort Hamilton, N. Y., for duty.

Freeman, Paul, capt., granted leave of absence for 4 months.

Jenkins, F. E., M. R. C., granted leave of absence for 3 months, with permission to go beyond the sea.

Gentry, E. R., Edwards, G. M., Heflebower, R. C., Welles, E. M., Jr., Thearle, W. H., McAfee, L. B., Michie, H. C., Jr., Holmberg, C. E., Schlanser, A. E., Beeuwkes, H., Carr, W. B., Aydelotte, J. T., Allen, W. H., Reynolds, Royal, Kremers, E. D., Weed, M. D., Darby, T. E., Ferenbaugh, T. L., Lamb, W. P., Davis, A. O., Klotz, S. P., Cooper, W. E., Davis, W. C., DeVoe, R. G., Woodson, T. D., Sheep, W. L., Gillespie, J. M., Beery, H. R., Cooper, A. T., Shugerman, H. P., Haverkampf, C. W., Kramer, Floyd, Hill, F. R., Casper, Joseph, M. R. C., ordered to report to Col. Valery Havard, president, Army Medical School, on Oct. 1, 1909, for a course of instruction at that school.

Geddings, E. F., major, granted leave of absence for 4 months, about Oct. 1, 1909.

Raymond, H. I., lieut. col., granted leave of absence for 1 month, about Sept. 16, 1909.

Laflamme, F. L. K., dental surgeon, will proceed to Fort Wayne, Mich., Fort Brady, Mich., and Fort Benjamin Harrison, Ind.

Medical Corps of the Navy

Changes for the week ended Sept. 18, 1909:

Robbins, I. W., acting asst.-surgeon, detached from the Naval Hospital, Mare Island, Cal., September 25, and ordered to instructions at the Naval Medical School, Washington, D. C.

Rose, M. E., asst.-surgeon, detached from the Naval Hospital, Norfolk, Va., and ordered to the *Celtic*.

Thompson, F. W., acting asst.-surgeon, detached from the *Celtic*, and ordered to instruction at the Naval Medical School, Washington, D. C.

Payne, J. H., P. A. surgeon, detached from the Naval Recruiting Station, Hartford, Conn., and ordered to the Naval Hospital, Navy Yard, New York.

Kuder, W. S., asst.-surgeon, unexpired portion of sick leave revoked, ordered to the Naval Recruiting Station, Hartford, Conn.

Stuart, M. A., asst.-surgeon, detached from duty with the Marine Detachment, Camp Elliott, Canal Zone, Panama, and ordered to duty at Ancon, Canal Zone.

Ziegler, J. G., asst.-surgeon, detached from duty at the Naval Hospital, Navy Yard, Pensacola, Fla., and ordered to duty with the Marine Detachment, Camp Elliott, Canal Zone, Panama.

Public Health and Marine-Hospital Service

List of changes for the seven days ended September 15, 1909.

Glennan, A. H., asst. surgeon-general, detailed to represent the Service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5-8, 1909.

Kerr, J. W., asst. surgeon-general, directed to proceed to Chicago and Springfield, Ill., on special temporary duty.

Carter, H. R., surgeon, Bureau order of July 20, 1909, revoked. *Directed to proceed to Louisville, Ky.*, and assume command of the Service.

Banks, Charles E., surgeon, granted three days' leave of absence from September 14, 1909.

McIntosh, W. P., surgeon, leave of absence granted August 11, 1909, for 21 days from September 1, 1909, amended to read 10 days from September 1, 1909, and 11 days from September 27, 1909.

Wertenbaker, C. P., surgeon, detailed to represent the Service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5-8, 1909.

Young, G. B., surgeon, detailed to represent the Service at the meeting of the Association of Military Surgeons, to be held in Washington, D. C., October 5-8, 1909.

Lumsden, L. L., P. A. surgeon, detailed to represent the Service at the annual meeting of the Medical Society of the State of Virginia, to be held in Roanoke, Va., *October 5-8, 1909.*

Fricks, L. D., P. A. surgeon, granted three months' leave of absence from September 24, 1909.

Creel, R. H., P. A. surgeon, on the arrival of Surgeon H. R. Carter, relieved from duty at Louisville, Ky., and directed to proceed to Philadelphia and assume temporary charge.

Robertson, H. McG., P. A. surgeon, granted two months' leave of absence from October 1, 1909.

Sweet, *E. A., P. A. surgeon, granted 21 days' leave of absence* from September 9, 1909.

Ridlon, Joseph R., P. A. surgeon, granted six days' leave of absence from September 11, 1909.

Elfers, J. C., acting asst.-surgeon, granted twenty days' leave of absence from September 11, 1909.

Hamilton, H. J., acting asst.-surgeon, granted three days' leave of absence from September 14, 1909.

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Tarbell, B. C., acting asst.-surgeon, leave of absence granted July 9, 1909, amended to read 30 days from August 1, 1909, with pay, and 13 days from September 1, *1909*, without pay.

Stevenson, J. W., acting asst.-surgeon, leave of absence for 30 days from August 29, 1909, without pay, revoked.

Villoldo, P., acting asst.-surgeon, granted 21 days' leave of absence from September 20, 1909.

Health Reports

The following have been reported to the Public Health and Marine-Hospital Service, during the week ended Sept. 17, 1909:

SMALLPOX—UNITED STATES

Indiana: Fort Wayne, Aug. 21-Sept. 4, 6 cases.
Kentucky: Lexington, Aug. 7-21, 2 cases.
Minnesota: Duluth, Aug. 20-27, 1 case.
Ohio: Dayton, Aug. 28-Sept. 4, 2 cases, 1 death.
Oregon: (8 counties), June 1-30, 27 cases.

SMALLPOX—FOREIGN

Arabia: Aden, Aug. 2-9, 1 death.
Brazil: Bahia, July 16-Aug. 6, 15 cases, 6 deaths; Rio de Janeiro, July 11-24, 9 cases, 7 deaths, July 31-Aug. 8, 8 cases, 1 death.
Chile: Valparaiso, Aug. 7-14, present.
Egypt: Cairo, July 15-22, 3 cases.
France, Paris, Aug. 3-9, 1 case.
Germany: Konigsburg District, Aug. 7-14, 3 cases.
India: Bombay, July 20-27, 5 deaths, Aug. 3-10, 4 deaths; Madras, July 17-23, 1 death, July 31-Aug. 6, 1 death; Rangoon, July 24-31, 1 death.
Italy: General, Aug. 8-19, 26 cases; Naples, Aug. 15-22, 5 cases, 2 deaths.
Mexico: Guadalajara, Aug. 12-19, 1 death; Mexico, July 10-17, 8 deaths.
Persia: Meshed-i-Ser, June 1-30, epidemic; Khorassan, epidemic; Kurdistan, epidemic.
Portugal: Lisbon, Aug. 7-14, 7 cases.
Russia: Moscow, July 24-Aug. 7, 32 cases, 18 deaths; Riga, July 24-31, 5 cases, Aug. 14-21, 1 case; St. Petersburg, July 24-31, 6 cases, 8 deaths.
Spain: Barcelona, Aug. 14-21, 6 deaths; Valencia, 12 cases.
Turkey: Smyrna, July 1-Aug. 6, 36 deaths.

YELLOW FEVER

Barbados: St. Joseph, Parish, Aug. 9-14, 1 case, 1 death.
Brazil: Bahia, July 23-Aug. 6, 3 cases, 2 deaths; Manaos, July 24-Aug. 7, 2 deaths; Para, July 31-Aug. 7, 2 cases, 2 deaths.
Ecuador: Guayaquil, July 23-Aug. 14, 8 deaths.
Mexico: Merida, Aug. 21-28, 4 cases, 2 deaths.

CHOLERA—INSULAR

Philippine Islands: Provinces, July 18-24, 295 *cases*, 192 deaths.

CHOLERA

China: Amoy, July 24-31, 20 deaths.
India: Bombay, July 20-27, 25 deaths, Aug. 3-10, 39 deaths; Calcutta, July 24-31, 28 deaths; *Rangoon, 5 deaths.*
Indo-China: Saigon, July 17-24, 3 cases, 3 deaths.
Japan: Kobe, Sept. 13, present in vicinity, July 31, 1 case.
Netherlands: Breda, Aug. 31, present; Dordrecht, present; Gorinchem, present; Rotterdam, Aug. 20-30, 21 cases, 8 deaths; Uithorn, Aug. 31, present.
Sumatra: Djambi, July 18-24, present.

PLAGUE

Chile: Iquique, Aug. 10, 6 cases, in lazaretto.
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Ecuador: Guayaquil, July 24-Aug. 14, 9 deaths.
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Peru: General, Aug. 14-21, 19 cases, 9 deaths.

Society Proceedings

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Amer. Academy of Ophth. and Oto-Laryngology, New York, Oct. 4-6.
Amer. Association of Railway Surgeons, Chicago, October 20-22.
Assn. of Military Surgeons of U. S., Washington, D. C., October 5-8.
Delaware State Medical Association, Dover, October 8.
Indiana State Medical Association, Terre Haute, October 7-8.
Kentucky State Medical Association, Louisville, October 19-21.
Minnesota State Medical Association, Winona, October 13-14.
Mississippi Valley Medical Association, St. Louis, October 12-14.
Pennsylvania, Med. Soc. of State of, Philadelphia, Sept. 27-Oct. 1.
South Dakota State Medical Association, Aberdeen, October 6-8.
Vermont State Medical Assn., White River Junction, Oct. 14-15.
Virginia, Medical Society of, Roanoke, October 5-8.
West Virginia State Medical Association, Elkins, October 6-8.

SIXTEENTH INTERNATIONAL MEDICAL CONGRESS

Held at Budapest, Aug. 29-Sept. 4, 1909

(Continued from page 966)

The Treatment of Contracted Pelves

Dr. Veit, Halle, Saxony, urged that operative interference should only be undertaken when absolutely necessary, and that in all cases perforation of the living child must be avoided. In the highest grades of pelvic contraction Cesarean section should be performed. In pelves with a moderate degree of contraction, when danger existed to the life of the mother and the child was dead, perforation was the last thing to do. In similar cases with a living child forceps should be tried with care and only for a short time, and if they failed then Cesarean section should be resorted to. Hebosteotomy should *only be done when fever and signs of septic infection were* present. In cases in which the life of the child was threatened *version should be attempted, and if this failed forceps* should be applied and, as a last resort, Cesarean section. Whenever possible no operative interference at all should be carried out, but any one of these operations might be necessary in certain cases.

Myoma and Fertility

Dr. A. Martin, Berlin, said that as a result of the great number of observed cases of pregnancy in myomatous uteri it was no longer possible to maintain the old opinion that myomata prevented intrauterine development of the ovum. Modern views as to the causes of sterility were also incompatible with this doctrine. The abundant hyperplasia of the ovaries in myoma was probably responsible, in the first place, for the remarkable fact that elderly women suffering from myoma and marrying late in life soon became pregnant, and, in the second place, for the delay in the occurrence of the climacteric in myomatous subjects. The observed cases of married women who conceived after removal of myomata, although they had previously been barren, were not sufficiently numerous to *decide the question; there were, moreover, many associated* conditions which could not be definitely ascertained.

Rapid Dilatation of the Cervix

Dr. G. Winter, Königsberg, Prussia: The ideal method of dilating the cervix must be one which involves no danger of excessive bleeding, of unavoidable lacerations of the cervix, or of the risk of infection, which will permit of the passage of a full-term child and of complete restoration of the functions of the cervix. Two methods are available—stretching or cutting of the tissues. The former can be carried out manually by means of a hydrostatic dilator, by a dilator such as that of Bossi, or by the body of the child. Manual dilatation possesses the advantage of requiring no special apparatus, but there is danger of slight tears of the cervix and of septic infection. Dilatation with a hydrostatic dilator guarantees complete dilatation and can be carried out aseptically; it possesses the disadvantage, however, of the likelihood of reclosure of the canal from elastic recoil. Bossi's dilator is a certain method and without danger when the cervix is unfolded, and entails but slight danger of infection. The risk of bad tears is considerable, however, and interference with the third stage of labor is not rare. *Dilatation by means of the child's body* after version is a simple and certain method, but usually entails death of the child. Of the cutting operations, superficial incisions are of limited practicability. Vaginal Cesarean section is the easiest of all the methods of dilatation. Dührssen's method is best; with this procedure injuries of the neighboring structures are not infrequent and the maternal mortality is about 1 per cent. The child is usually delivered alive. Vaginal Cesarean section when practised early in eclampsia gives excellent results; in 20 cases the fits at once ceased after performance of the operation. In accidental hemorrhage, if immediate delivery is necessary, vaginal Cesarean section gives good results. In placenta prævia all methods of rapid dilatation are best avoided because of the risk of rupture of the cervix. In septic infection any method likely to produce tears of the cervix should not be practisea. In cases in which death of the child is threatened only those operations should be performed which entail no risk to the life of the mother. Of general conditions, eclampsia, heart failure, impending suffocation from acute lung affections, and at times tumors of the genitalia, stenosis of the cervix, and impending death of the mother, are all indications for performance of vaginal Cesarean section, which is by far the best of the various methods available for rapid dilatation of the cervix, and for which eclampsia is the strongest and most important indication.

Recent Researches on the Hygienic Importance of Alcohol

Prof. T. Laitinen, Helsingfors, Finland, summarized his conclusions under the four following heads: 1. The importance of alcohol as an article of food is rendered very questionable by recent researches. 2. These researches prove that alcohol diminishes the natural power of the tissues to resist injury, promotes degeneration, and has a disastrous effect on future generations. 3. The questions of relation of alcoholic liquor to crime and of the manufacture and sale of such beverages deserve the serious consideration of the legislature. 4. It is the duty of medical men to direct more attention than formerly to the alcohol question, and by careful study to decide whether recent researches are justified or not in regarding alcohol and alcoholic beverages as a poison and one of the principal causes of degeneration in the human family; they ought also to consider whether it would not be advisable in medical practice, and especially in hospitals, either to banish it altogether or at least to prescribe it with the same care as other poisonous drugs. In this matter the attitude taken up by medical men as representatives of public hygiene was of quite exceptional importance, and afforded an illustration of the passage in Homer, quoted by Bornstein, to the effect that one medical man was of more consequence than a number of other men.

The Sanitary Uses of Ozone

Dr. Gilbert J. Fowler, Manchester, England, discussed the application of ozone to the purification of water and air in the light of the most recent developments. The purification of water he considered in reference to: organic matter in solution and suspension; color, smell, taste; organisms—e.g., algæ, infusoria, bacteria; metallic impurities. He concluded that ozone treatment of water was to be recommended (a) when adequate sand filters were costly to erect and difficult of supervision; (b) when the amount of organic matter in solution in the water was limited; (c) when the pollution was mainly bacterial and of an intermittent character; and (d) when electrical power could be cheaply obtained. It must be understood, however, that some preliminary treatment for the removal of suspended matter, whether consisting of ordinary mud or algæ and infusoria, should always be provided. He referred to successful experiments on the purification by ozone of air polluted by human respiration, and to various miscellaneous applications. Finally, he said, a stage had now been reached when the use of ozone for sanitary purposes deserved the careful attention of those engaged in public health problems.

The Chronic Form of Pancreatitis

Mr. Mayo Robson, London, England, directed attention to chronic pancreatitis as a clinical entity, apart from gallstone trouble, and he also described how frequently inflammatory enlargement of the pancreas accompanies cholelithiasis, especially if the concretions are in the common duct. He pointed out that chronic pancreatitis may persist long after the original cause has disappeared and may simulate cancer of the head of the pancreas, and so terminate fatally, the impression being that the condition is incurable, when as a matter of fact suitable surgical treatment is capable of curing it. His observations were based on a large series of cases in which he had operated, the first operation having been performed by him in June, 1890; this patient was in good health 14 years later, a second in 1891, and a third in 1892. In the latter case death occurred two days after operation and a microscopic examination of the pancreas showed the case to be one of interstitial pancreatitis. In 1895, he operated on two patients who were in good health several years later, and in 1896 on another who was well some time subsequently. In this year (1896), Riedel published a paper on inflammatory enlargement of the head of the pancreas in which he described two cases of pancreatitis (in the first of which operation was done in 1893) associated with malignant disease. Another paper appeared in the same year by the same author on cases caused by gall-stones. Mr. Mayo Robson described the symptoms, the pathologic condition, the causes and the treatment of chronic pancreatitis and showed that the anatomic variations in the relations of the common bile duct to the pancreas and in the termination of the ducts had an important bearing on the etiology of the condition. He urged the importance of preventive treatment such as the removal of gall-stones before they had produced complications, and the treatment of duodenal ulceration by gastroenterostomy. If, after a fair trial of general treatment, not too long continued, the symptoms persisted, and the signs of failure in pancreatic digestion and metabolism were manifesting themselves, the question of surgical treatment, he said, ought to be seriously considered, especially when the disease was associated with jaundice. Rational treatment should aim at the cause, whether that was gall-stones, pancreatic calculi, duodenal catarrh, duodenal ulcer, alcoholism, or syphilis. Even in the absence of obvious removable causes he advocated efficient drainage of the infected bile and pancreatic ducts, either by cholecystotomy or cholecystenterostomy, preferably the latter. His experience had taught him that if the cause can be removed at an early stage an absolute cure is possible; and though complete restoration of the damaged gland in more advanced cases cannot always be promised, yet an arrest of the morbid process may be looked for, and the remaining portion of the pancreas will be able to carry on the metabolic, and, even if completely, the digestive functions of the gland.

Arthrodesis

Mr. R. Jones, Liverpool, England: The operation should never be performed on children under 8 years, not until all deformity has been corrected by wrench and tenotomy. It must not be performed if any hope exists of muscular recovery. It should be planned so as to avoid injury of the epiphysis and so that the bones lie in good apposition. Splints should be worn until consolidation is complete.

(To be continued)

INTERNATIONAL CONFERENCE ON LEPROSY

Held in Bergen, Norway, August 16-19, 1909

(From Our Special Correspondent)

The conference has been a great success, and it will be registered as one of the greatest efforts of medical science to stamp out a scourge which for centuries has afflicted humanity.

Description of Bergen

No better place for such an interesting meeting could have been selected than Bergen, a beautiful city, which is considered as a shining pearl which has risen from the sea. From all sides the city gazes out to sea from the mountain sides, from the headland and far in from the sheltered bays. Seven hills are in the background surrounding the city wall and covered with pines and mountain ash. Bergen is a city of a little over

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Egypt: Cairo, July 15-22, 3 cases
France, Paris, Aug. 3-9, 1 case.
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Dr. A. Martin, Berlin, said that as a result of the great number of observed cases of pregnancy in myomatous uteri it was no longer possible to maintain the old opinion that myomata prevented intrauterine development of the ovum. Modern views as to the causes of sterility were also incompatible with this doctrine. The abundant hyperplasia of the ovaries in myoma was probably responsible, in the first place, for the remarkable fact that elderly women suffering from myoma and marrying late in life soon became pregnant, and, in the second place, for the delay in the occurrence of the climacteric in myomatous subjects. The observed cases of married women who conceived after removal of myomata, although they had previously been barren, were not sufficiently numerous to decide the question; there were, moreover, many associated conditions which could not be definitely ascertained.

Rapid Dilatation of the Cervix

Dr. G. Winter, Königsberg, Prussia: The ideal method of dilating the cervix must be one which involves no danger of excessive bleeding, of unavoidable lacerations of the cervix, or of the risk of infection, which will permit of the passage of a full-term child and of complete restoration of the functions of the cervix. Two methods are available—stretching or cutting of the tissues. The former can be carried out manually by means of a hydrostatic dilator, by a dilator such as that of Bossi, or by the body of the child. Manual dilatation possesses the advantage of requiring no special apparatus, but there is danger of slight tears of the cervix and of septic infection. Dilatation with a hydrostatic dilator guarantees complete dilatation and can be carried out aseptically; it possesses the disadvantage, however, of the likelihood of reclosure of the canal from elastic recoil. Bossi's dilator is a certain method and without danger when the cervix is unfolded, and entails but slight danger of infection. The risk of bad tears is considerable, however, and interference with the third stage of labor is not rare. Dilatation by means of the child's body after version is a simple and certain method, but usually entails death of the child. Of the cutting operations, superficial incisions are of limited practicability. Vaginal Cesarean section is the easiest of all the methods of dilatation. Dührssen's method is best; with this procedure injuries of the neighboring structures are not infrequent and the maternal mortality is about 1 per cent. The child is usually delivered alive. Vaginal Cesarean section when practised early in eclampsia gives excellent results; in 20 cases the fits at once ceased after performance of the operation. In accidental hemorrhage, if immediate delivery is necessary, vaginal Cesarean section gives good results. In placenta prævia all methods of rapid dilatation are best avoided because of the risk of rupture of the cervix. In septic infection any method likely to produce tears of the cervix should not be practisea. In cases in which death of the child is threatened only those operations should be performed which entail no risk to the life of the mother. Of general conditions, eclampsia, heart failure, impending suffocation from acute lung affections, and at times tumors of the genitalia, stenosis of the cervix, and impending death of the mother, are all indications for performance of vaginal Cesarean section, which is by far the best of the various methods available for rapid dilatation of the cervix, and for which eclampsia is the strongest and most important indication.

Recent Researches on the Hygienic Importance of Alcohol

Prof. T. Laitinen, Helsingfors, Finland, summarized his conclusions under the four following heads: 1. The importance of alcohol as an article of food is rendered very questionable by recent researches. 2. These researches prove that alcohol diminishes the natural power of the tissues to resist injury, promotes degeneration, and has a disastrous effect on future generations. 3. The questions of relation of alcoholic liquor to crime and of the manufacture and sale of such beverages deserve the serious consideration of the legislature. 4. It is the duty of medical men to direct more attention than formerly to the alcohol question, and by careful study to decide whether recent researches are justified or not in regarding alcohol and alcoholic beverages as a poison and one of the principal causes of degeneration in the human family; they ought also to consider whether it would not be advisable in medical practice, and especially in hospitals, either to banish it altogether or at least to prescribe it with the same care as other poisonous drugs. In this matter the attitude taken up by medical men as representatives of public hygiene was of quite exceptional importance, and afforded an illustration of the passage in Homer, quoted by Bornstein, to the effect that one medical man was of more consequence than a number of other men.

The Sanitary Uses of Ozone

Dr. Gilbert J. Fowler, Manchester, England, discussed the application of ozone to the purification of water and air in the light of the most recent developments. The purification of water he considered in reference to: organic matter in solution and suspension; color, smell, taste; organisms—e.g., algæ, infusoria, bacteria; metallic impurities. He concluded that ozone treatment of water was to be recommended (a) when adequate sand filters were costly to erect and difficult of supervision; (b) when the amount of organic matter in solution in the water was limited; (c) when the pollution was mainly bacterial and of an intermittent character; and (d) when electrical power could be cheaply obtained. It must be understood, however, that some preliminary treatment for the removal of suspended matter, whether consisting of ordinary mud or algæ and infusoria, should always be provided. He referred to successful experiments on the purification by ozone of air polluted by human respiration, and to various miscellaneous applications. Finally, he said, a stage had now been reached when the use of ozone for sanitary purposes deserved the careful attention of those engaged in public health problems.

The Chronic Form of Pancreatitis

Mr. Mayo Robson, London, England, directed attention to chronic pancreatitis as a clinical entity, apart from gallstone trouble, and he also described how frequently inflammatory enlargement of the pancreas accompanies cholelithiasis, especially if the concretions are in the common duct. He pointed out that chronic pancreatitis may persist long after the original cause has disappeared and may simulate cancer of the head of the pancreas, and so terminate fatally, the impression being that the condition is incurable, when as a matter of fact suitable surgical treatment is capable of curing it. His observations were based on a large series of cases in which he had operated, the first operation having been performed by him in June, 1890; this patient was in good health 14 years later, a second in 1891, and a third in 1892. In the latter case death occurred two days after operation and a microscopic examination of the pancreas showed the case to be one of interstitial pancreatitis. In 1895, he operated on two patients who were in good health several years later, and in 1896 on another who was well some time subsequently. In this year (1896), Riedel published a paper on inflammatory enlargement of the head of the pancreas in which he described two cases of pancreatitis (in the first of which operation was done in 1893) associated with malignant disease. Another paper appeared in the same year by the same author on cases caused by gall-stones. Mr. Mayo Robson described the symptoms, the pathologic condition, the causes and the treatment of chronic pancreatitis and showed that the anatomic variations in the relations of the common bile duct to the pancreas and in the termination of the ducts had an important bearing on the etiology of the condition. He urged the importance of preventive treatment such as the removal of gallstones before they had produced complications, and the treatment of duodenal ulceration by gastroenterostomy. If, after a fair trial of general treatment, not too long continued, the symptoms persisted, and the signs of failure in pancreatic digestion and metabolism were manifesting themselves, the question of surgical treatment, he said, ought to be seriously considered, especially when the disease was associated with jaundice. Rational treatment should aim at the cause, whether that was gall-stones, pancreatic calculi, duodenal catarrh, duodenal ulcer, alcoholism, or syphilis. Even in the absence of obvious removable causes he advocated efficient drainage of the infected bile and pancreatic ducts, either by cholecystotomy or cholecystenterostomy, preferably the latter. His experience had taught him that if the cause can be removed at an early stage an absolute cure is possible; and though complete restoration of the damaged gland in more advanced cases cannot always be promised, yet an arrest of the morbid process may be looked for, and the remaining portion of the pancreas will be able to carry on the metabolic, and, even if completely, the digestive functions of the gland.

Arthrodesis

Mr. R. Jones, Liverpool, England: The operation should never be performed on children under 8 years, not until all deformity has been corrected by wrench and tenotomy. It must not be performed if any hope exists of muscular recovery. It should be planned so as to avoid injury of the epiphysis and so that the bones lie in good apposition. Splints should be worn until consolidation is complete.

(To be continued)

INTERNATIONAL CONFERENCE ON LEPROSY

Held in Bergen, Norway, August 16-19, 1909

(From Our Special Correspondent)

The conference has been a great success, and it will be registered as one of the greatest efforts of medical science to stamp out a scourge which for centuries has afflicted humanity.

Description of Bergen

No better place for such an interesting meeting could have been selected than Bergen, a beautiful city, which is considered as a shining pearl which has risen from the sea. From all sides the city gazes out to sea from the mountain sides, from the headland and far in from the sheltered bays. Seven hills are in the background surrounding the city wall and covered with pines and mountain ash. Bergen is a city of a little over

80,000, and has enormous warehouses. Steamships leave every day in different directions carrying large quantities of merchandise, fish, hides, etc. The inhabitants are so exceedingly kind and courteous that every foreigner must admire their high degree of refinement.

Meeting Place

The congress met in the magnificent building, *"Den gode Hensigt."* Everything possible was done for the comfort of the members of the conference. The bureau of registration, post-office and information department were in one large room. The hall, a spacious and magnificent one, with a stage and pulpit for speakers, was magnificently decorated with palms and the flags of every nation represented to the conference. A gallery was reserved for ladies and guests where they could hear the reading of the papers and the discussion.

Reason for Selecting Bergen as Place of Meeting

Bergen was selected as the seat of the conference because the city has done much in the investigation of leprosy to deserve this distinction. In the thirteenth century in Europe were many hospitals for leprosy, which were supported by the churches and managed by charitable monks; such a hospital was known as the "House of Lazarus."

History of Leprosy in Norway

Leprosy was introduced in Norway, very likely, by the Vikings in their peregrinations, coming back from the coasts of Ireland, England, Iceland. At any rate, in the year 1000 leprosy is mentioned in the laws of Norway, which exempted leprous people from doing service in war. The first hospital for the disease in Norway was built in Bergen, in the thirteenth century. It was called the Hospital of St. Katherina; later it was changed to a general hospital. In 1410 was founded St. Jorgen's Hospital for Leprosy, which in 1702 burned down and in the same year was rebuilt as it is at the present time. Small hospitals for leprosy were established in the eastern parts of the country; the more important being those of Trondhjem, Bergen and Molde. The disease recently has decreased considerably in Norway and most of these hospitals have been discontinued or have been changed to general hospitals. Originally these hospitals were a matter of charity. There was no knowledge of the disease and no effort for a rational treatment. Scientific investigations began only in the nineteenth century. The first name to be mentioned is that of D. C. Danielsen and C. W. Boek, who in 1847, published a book on leprosy, which became of the greatest importance and opened a new era in the history of medicine. The theories advanced in this book have become the foundation of the treatment and of the prophylaxis of contagious diseases. Although the two-mentioned authors did not know the micro-organism, which is the cause of leprosy, yet they opened the way for the explanation of the essence of this disease. It was but natural that the scientific work was continued by another man from Bergen, G. Armauer Hansen, who in 1872 discovered the *Bacillus lepræ*, giving to the world the true cause and the treatment of the disease.

Opening of the Congress

Monday morning, August 16, the congress was formally opened by the King of Norway, who made a brief address in French.

President's Address

Dr. G. A. Hansen referred to the ravages of leprosy in the middle ages, and to the present condition as it is found to-day:

The first conference on leprosy was called in 1897 on account of the dreaded scourge making its way into Germany from Russia. From that time we have still to know how far the disease has extended and how dangerous is yet its spreading. Such an old and deep-rooted disease that develops in such an obscure manner cannot be stamped out in one day. The conference has before it a work, which extends over the history of humanity. Norway has invited scientists to attend this conference for several reasons. In the first place, Norway, together with some other countries, has the doubtful honor of still having leprosy in its hospitals, but this has been the cause of careful and scientific investigations of the disease by Danielsen and Boek, and on account of the studies of these two scientists, Norway has taken decided public measures against the disease. The entire study and development of these prophylactic measures have been continued until we have obtained most satisfactory results. We are glad for that which we have contributed for this international work of combating leprosy. In spite of all this diligent study, there are yet many unsolved problems opened for discussion. Many of these points of disagreement will be treated here, as, for instance, the mode of dissemination of the disease, hereditary transmission, etc. Many obscure points are connected with the symptomatology: For instance, we do not yet know the first symptoms of the disease; the relation of leprosy to syringomyelia, etc. The result of treatment is a matter of the greatest importance.

The Reports of Delegates

The delegates representing the various nations were represented by Professor Kirchner, delegate from Germany.

The following-named countries sent official delegates: Argentine Republic, Belgium, Bulgaria, China, Cuba, Denmark, Great Britain, France, Holland, Italy, Japan, Portugal, Russia, Spain, Sweden, Germany, Egypt, Austria-Hungary and the United States of America. Besides these, there were many representatives of institutions of learning and others who attended in a private capacity.

Following the opening of the conference, certain official delegates presented their reports on the status of leprosy and the measures adopted against it in the countries they represented. Such reports were made from the following countries: Germany, France, Russia, Austria-Hungary, Italy, Japan, Belgium, United States of America and Argentine Republic.

Dr. V. Petersen, St. Petersburg, spoke of the isolation leprosy colony established by the Russian government. Since the establishment of this colony, the cases of leprosy in Russia have somewhat diminished. Private establishments cannot fight this disease successfully and it is the duty of the government to stamp out this scourge. The leprosarium has to be a true colony where the lepers can find occupation and at the same time they must be treated. Special care has to be given to the children of lepers, who have to be taken in a special institution, separated from the colony.

Dr. Kobler, Sarayevo, Bosnia, spoke of the condition of the leper in Bosnia and Herzegovina; since 1897 the disease has constantly diminished, so much so, that now entire districts which used to be infected with lepers are entirely free. This he attributed to the enforced hygienical rules, to the increased instruction of these populations, to the bettered sanitary conditions and to the better class of physicians who are now practising in those regions.

Dr. Bordoni Uffreduzi of Italy spoke of the conditions of the leper in Italy; Professor Babes of Bucharest spoke of the actual condition of the leper in Roumania; Dohi of Tokyo gave a summary of conditions in Japan; Dubois-Havenith of Brussels told of leprosy in the Belgian Congo, and Sommer of Buenos Aires spoke for Argentina.

Dr. Brinckerhoff of U. S. Public Health and Marine-Hospital Service spoke of the status of leprosy in the United States and its dependencies and the measures now being taken by the government for the study and prevention of the disease.

Dr. Raynaud of Algeria referred to the conditions in Algeria, where there are now 109 cases of leprosy—39 natives and 70 Europeans, 62 being Spaniards from the provinces of Alicante and Valencia. He found leprosy very rare among the Arabs, but the greatest danger is from foreign importation. As a consequence, they have adopted the following rules: centralization of all information concerning lepers, sanitary surveillance of them and frequent disinfection. Lepers are not allowed to land in the country, and when discovered are sent back to the place from which they came. The lepers of the country have to be confined in hospitals at the expense of the state. Lepers who are apparently well are not allowed to be milkmen, bakers, grocers, etc.

(To be continued)

MICHIGAN STATE MEDICAL SOCIETY

Forty-Fourth Annual Meeting, held at Kalamazoo, Sept. 15-16, 1909

The President, Dr. A. I. Lawbaugh, Calumet, in the chair.

Addresses of Welcome

Mr. Fitzgerald welcomed the society on behalf of the city, and Dr. A. I. Noble, superintendent of the Michigan Asylum, spoke on behalf of the medical profession.

Resolutions of Confidence in Dr. Cook

Resolutions were adopted unanimously extending to Dr. Frederick A. Cook the heartiest congratulations of the society on his dignified bearing in a trying situation and expressing confidence that Dr. Cook had attained the much-coveted goal, and believing that additional luster and honor would come to him as the details of his tremendous achievement shall be better made known to the public.

Officers Elected

The following officers were elected for the ensuing year: President, Dr. J. H. Carstens, Detroit; first vice-president, Dr. V. Tupper, Bay City; second vice-president, Dr. E. H. Webster, Sault Ste. Marie; third vice-president, Dr. J. F. Breakey, Ann Arbor; fourth vice-president, Dr. E. M. Eccles, Blissfield; secretary, B. R. Schenck, Detroit (reelected); treasurer, Dr. W. S. Anderson, Detroit. Bay City was selected as the place for holding the next annual meeting.

President's Address: The Physician, His Duties and Relations to the Profession and the Public

Dr. A. I. Lawbaugh, Calumet, said in part:

With the passing of the ages there developed the physician, the man set apart for the healing and cure of the ills of the flesh, devoting his life to the battle against disease, either in the treatment of the sick individual or in the combating of epidemics. He goes further than this. He is not satisfied merely with fighting existent disease in the patient or in the community; he looks to the prevention of future ills by outlining broad plans for the conservation of human life and energy, by educating and inspiring the public to the enactment of pure food laws, the protection of water supplies, the extermination of parasites and disease-bearing insects, the conquest of the tropics, the regulation of child labor, the protection of sex relations, the fight against tuberculosis and the venereal diseases, and the enforcement of general hygienic measures.

The modern physician must know life in all its phases; he must have the knowledge of the main springs of human action. He cannot content himself with a knowledge of anatomy, a little pathology, more symptomatology and still more materia medica and surgery. To fulfill his function, to be of best use to the community, he must possess a knowledge of all things that may benefit the community, aside from the mere matter of treating sick individuals. He must lead men to right living, because it is the way to long life and health. He must have the knowledge of human nature as revealed in history and the world's great literature. He must know psychology, sociology and political economy and he must be a past-master in the province of hygiene and sanitation. He must be able to understand the spiritual requirements of his clients, and in this way to offset their inclination to turn to false gods, such as Christian science, the Emmanuel movement, and other forms of so-called mind cure.

For medical men to be of the greatest value, not only to the profession, but to the community at large, there must be organization and cooperation as manifested in organization cannot be too strongly emphasized. The first and chief essential in the organization of a medical society is the laying of the cornerstone of unity and friendship. In the great movements affecting the nation as a whole, the physicians may find a proper field of action. Already, through the united stand and efforts of the profession, as exemplified in the acts of the American Medical Association, much useful and judicious legislation has been put in force by both federal and state legislative bodies. The physician has come also to be a maker of laws. In all matters concerning the physical health of the nation, his expert knowledge and specialized training becomes necessary to the proper and intelligent framing of health laws and their enforcement. In municipal affairs, the physician must also take his part as a citizen on whom certain peculiar responsibility rests. The public must be taught the value of hospitals in the restriction of disease. The conquest of disease depends on the education of the public, and the most important question of the day is that concerning the best method of inculcating such education; aside from the instruction of children in the public schools, the press is beyond doubt an invaluable avenue of education through which the lay public may be reached.

Stomach Lavage

Dr. Charles D. Aaron, Detroit: Lavage of the stomach seems to be the best means for modifying and counteracting functional changes; but only when it is learned that the mechanical function plays the principal rôle in digestion, can the indications for irrigation be more precisely determined. Experience has taught the great usefulness of lavage in most cases of intoxication and autointoxication. It is of benefit in the vomiting of patients suffering from uremia and eclampsia and in urinary intoxications generally. I have used the stomach tube for diagnostic purposes in old people without feeling uneasy about the theoretical contraindication enumerated with much detail in the text-books; but in each case I have given due weight to the question of whether or not the procedure was one of absolute necessity. Autolavage is a form of stomach irrigation, which has been called physiologic, in order to distinguish it from the kind spoken of; for here the use of the stomach tube is not necessary. It is sufficient that the patient drink from four to eight ounces of the irrigation fluid and then lie down on his abdomen, supported on a somewhat hard resisting surface across the bed, or on the floor. In this position let him breathe as deeply as possible. From fifteen to twenty deep respirations are sufficient to drive the contents of the stomach through the pylorus. This procedure may be repeated as often as necessary. Autolavage may be applied two or three hours after a light breakfast, four or five hours after the midday meal or evening meal, and sometimes also in the morning before breakfast. In this way the stomach will be effectively cleansed after each period of digestive work.

DISCUSSION

Dr. E. L. Eggleston, Battle Creek: I think in the experience of all of us there is a time when it is easier to use a stomach tube than to study the case, make a proper diagnosis, and outline the proper system of therapeutics. A few years ago most of my patients with gastric disorders needed lavage frequently. To-day I seldom use it except to aid in making a diagnosis. There are a number of conditions in which it is of value, but its indiscriminate use is unfortunate. A certain number of patients will come to us in which there is a question as to whether the condition is surgical or not. I have seen a number of patients in whom there has been an ulcer at the pylorus which had healed, left a cicatrix which mechanically interfered with the emptying of the stomach, and those individuals have been carried along for months on lavage, gradually losing weight, being so reduced at the time of operation that it was impossible for them to recover after operation. This is unfortunate. There are a number of conditions in which there is an atonic condition of the stomach secondary to the general disorder, but in which gastric lavage, while it may not be curative in itself, is certainly a necessary proceeding. I have not been successful with autolavage, because in a certain number of neurotic individuals I have been afraid to institute it. I have found that a great many such patients have practised some sort of autolavage greatly to their detriment, as they had become so fearful of continued distress after each meal, that they would empty the stomach, in this way greatly interfering with nutrition. A patient with an atonic condition of the stomach, who is not able to eat more than two meals a day, at bedtime will have several ounces of undigested material in the stomach. Such a patient will have a restless night. During the night the changes which have taken place in the food have been such that a certain amount of poisoning results. The patient's rest has been greatly disturbed, and in the morning there is an unsatisfactory condition. In these cases I have always made it a rule to relieve the stomach of its contents previous to the patient retiring; this is more beneficial than to leave the material in the stomach until morning. Another point which has guided me somewhat in the use of lavage is nausea. This paper has strengthened my belief in the fact that the lavage tube has been used too frequently, and, aside from its use as a means of diagnosis, I believe it will be used less frequently in the future.

Dr. Frank Smithies, Ann Arbor: I cannot agree with Dr. Aaron as to the quantity of material used for the lavage. From a somewhat extensive experience in washing out stomachs, I have come to the conclusion that large quantities of water may be used, if such quantities of water are regulated at the time of entrance into the stomach. This is done by means of the common-glass irrigator, marked off in liters, half-liters or quarts, as the case may be. Large quantities are frequently necessary, provided they are removed, and the stomach is not tested to its limit. It has been a common experience of people who have washed their stomachs that small quantities of liquid introduced into the stomach frequently empty the stomach only partially, as in the case of hour-glass stomach. It is only at the end of lavage, and with large quantities of solution, that it is possible to wash out the material from the second chamber, as it were, and send the patient home with a comparatively clean stomach. Again, in cases of marked dilatation, with retention, whether the retention is due to a new growth or to a stricture of the pylorus, by the use of small quantities of lavage liquid one only washes the top off. The most important part of lavage is the end lavage, because frequently retained contents, such as mucus, are obtained, and frequently tissue bits and things which are important bacteriologically and otherwise. The whole question of gastric lavage as a therapeutic measure rests on diagnosis. I have not found autolavage successful.

Dr. B. A. Shepard, Plainwell: I want to emphasize the point brought out with regard to the use of the stomach pump in neurotic cases. It is sometimes amusing to see the mental effect of leaving a stomach pump in the room. I have known of several patients who had had excessive vomiting for several weeks having been cured simply by the physician exhibiting the stomach pump in the sick-room; or by washing out the stomach of neurotics when the stomach was involved. Autolavage is important. Its effects are the stimulation of the musculature of the stomach forcing the contents into the bowel.

Dr. Johann Flinterman, Detroit: Many cases of dilatation of the stomach after surgical operations can be relieved by lavage. I have applied it in cases of ileum, in which there was fecal vomiting, and in which after the application of the stomach tube relief was afforded. Again, the symptoms of strangulation in cases of hernia are sometimes relieved by lavage. It is a valuable remedy in actual dilatation of the stomach, as well as in cases of strangulated hernia or intestinal incarceration, or obstruction in which operation is sometimes refused.

Dr. Charles D. Aaron, Detroit: If a patient who has stenosis of the pylorus is not improving, but constantly losing weight, is not turned over to a surgeon for operation we are likely to lose him. I cannot agree with Dr. Smithies in the use of large quantities of water in cases of dilatation of the stomach; I do not think it necessary to use large quantities of water at any time. In a case of dilatation one will usually find a pint or more of fluid in the stomach to begin with, and it is necessary to remove the liquid contents from the stomach, and to use from 6 to 8 ounces of water at a time, which will be found sufficient. That obtains also in cases before operation. It is certainly harmful to put water into the stomach, overdistend the musculature and expect Nature to contract the muscle perfectly, or at the time one wishes to feed the patient again. Dr. Flinterman's remarks on acute dilatation are well taken. It is the only method we have of bringing about recovery in cases of acute dilatation of the stomach following operations, but even then there is a transudation of the liquid elements of the blood into the stomach, and it is necessary at first to remove the liquid in the stomach, and then add small quantities and wash it out.

(To be continued)

MEDICAL SOCIETY OF THE MISSOURI VALLEY

Twenty-second Annual Meeting, held at Council Bluffs, Iowa, Sept. 9-10, 1909

The president, Dr. C. B. Hardin, Kansas City, Mo. in the chair.

Officers Elected

The following officers were elected for the ensuing year: President, Dr. A. B. Somers, Omaha, Nebr.; first vice-president, Dr. C. R. Woodson, St. Joseph, Mo.; second vice-president, Dr. Flavel B. Tiffany, Kansas City, Mo.; secretary, Dr. Charles Wood Fassett, St. Joseph, Mo., re-elected; treasurer, Dr. T. B. Lacey, Council Bluffs, Iowa, re-elected.

Omaha, Nebr., was selected as the place for holding the semiannual meeting in March, 1910.

Dr. Hardin in his presidential address, offered suggestions with reference to the future conduct and improvement of the society.

Diagnosis and Treatment of Gastric Ulcer with Especial Reference to the Lenhartz Diet

Dr. Leroy Crummer, Omaha: We can claim the following advantages for the Lenhartz treatment: First, it is more comfortable for the patient. Second, there is less loss of weight and nutrition. Third, the period of return to normal diet is shorter. Fourth, the tendency to relapse is less. Till the last few years, the treatment has always been medical, but recently surgical treatment has slipped into the foreground to a great extent. The most conservative surgeons have generally advised operation only after medical means have failed, but that even these restrictions are not enough is now recognized. I have had the opportunity to carry out the Lenhartz treatment in eight cases of gastric ulcer, five of which were comparatively simple cases, and the treatment was successful without modifying any of the details. One patient went through the treatment with seeming complete success and left the hospital greatly improved in weight and strength, but died suddenly one month later with some acute abdominal trouble, probably perforative peritonitis. The other two patients, in addition to the clear ulcer condition, presented severe anemia and signs of pyloric obstruction. For the results of pyloric ulcer, surgical treatment is often demanded, and in general the opinion has been that operation is indicated in: First, chronic ulcer *per se;* second, acute hemorrhage; third, perforation; fourth, pyloric stenosis. The statement is often made that when medical treatment fails in chronic ulcer, a gastroenterostomy or other operation should be done. This indication, I think, should be revised and stated as follows: No operation should be done in chronic ulcer till the patient has had the benefit of a careful trial with the Lenhartz treatment.

DISCUSSION

Dr. John P. Lord, Omaha: I recall several cases of gastric ulcer in men who are now doing well without having undergone surgical intervention. I speak of this to emphasize the success which attends the expectant treatment of these cases. However, when an operation is indicated in gastric ulcer, it should be performed.

Dr. W B. Deffenbaugh, St. Joseph Mo.: In the medical treatment of gastric ulcer it is important to prescribe a diet which is free from irritating material. The average diet contains many things that are imperfectly masticated; they pass over the inflamed area, or through the pylorus, and keep up a mechanical disturbance.

Dr. R. C. Moore, Omaha: In my experience, comparatively few cases present the classical symptoms of gastric ulcer, but when we have one of these cases, diet is the main thing to consider. I do not resort to feeding by the rectum. I keep the patient as quiet as possible, maintain the action of the different secretory organs as best I can and place the patient on such food as can be digested. Milk should be the main article of diet. When the case takes on a surgical aspect, operation should be considered, and performed if necessary.

Dr. W. L. Ross, Omaha: Gastric troubles are functional and not organic, and we should not be in too great haste in saying that this or that patient has ulcer of the stomach, simply because he or she complains of pain. The whole symptomatology should be gone over in order to determine whether the cause is really located in the stomach or not.

Splenectomy

DR. W. B. DEFFENBAUGH, St. Joseph, reported a case of traumatic rupture of the spleen, in which he resorted to splenectomy, with a successful result.

DISCUSSION

DR. I. U. PARSONS, Malvern, Iowa: Several years ago a boy ten years old fell across a wash-tub, striking himself in the region of the spleen. Several physicians saw the child, but were unable to make a correct diagnosis. Two months after the injury a tumor developed in that region. The abdomen was opened, and a large cyst of the spleen was found and drained. The boy recovered.

DR. A. C. STOKES, Omaha: The spleen, according to German authority, has a physiologic function. It has to do with infections in the production of immunity, or the swallowing up of infections. This is illustrated by the fact that so many patients who have had infectious diseases have enlargement of the spleen. Embryologically, and from the standpoint of comparative anatomy, the spleen seems to be more of a remnant than anything else, for in animals it is much larger in comparison with the body-weight than it is in man. The blood supply seems to be about the same.

Cancer: A Constitutional Disease; Its Rational Treatment

DR. JOHN E. SUMMERS, Omaha, delivered the address on Surgery, selecting this subject. He referred to recent investigations concerning the medical and surgical treatment in cases of cancer of the genitalia, etc.; and said:

Technic. First, curette thoroughly and dry carefully, then pour one-half ounce of acetone through a Ferguson speculum (with patient in the Trendelenburg position). Leave this in for fifteen or twenty minutes, then let the acetone run out and pack the cavity with gauze soaked in acetone. Wash the vulva and vagina; insert tampon. In rectal cancer, follow a like practice only first introduce tampon above growth before using acetone. Repeat the use of acetone two or three times a week in office practice. Protect the vulva with vaselin. By this treatment, the oozing is checked, and the wound surface is covered with a thin white film. The odor is remarkably reduced. The discharge is at first watery and then disappears. The wound shrinks and tends to heal. The health improves. The opsonic index is raised.

Acetone bisulphite is a white powder which, dissolving in the wound, gives off pure acetone, and may be used in place of acetone; its method of application is after the same fashion. Besides escharotics, the *x*-ray and radium, which, when the cancer or sarcoma can be reached tend to destroy or inhibit its growth, there are certain drugs of great value in the internal treatment of cancer. They are mostly of the alterative type, and usually are best given hypodermically. Certain preparations of arsenic, mercury and iron are to be commended. Iodin, I have not found so useful, but it has its friends. Having noted the fact that cancer never begins primarily in bone, that sarcomas in which the bone element predominates are least malignant, it occurred to me that if, in any way, I could increase or overload the blood with lime, it would be a rational therapeutic measure in the treatment of malignant disease as a postoperative measure of prophylaxis and as a remedial agent in conjunction with the hypodermic use of alteratives. So far, I have reason to believe there is value in the remedy—so much do I think so, that I hope my friends will try it. I use the lactate of calcium given, to begin with, in a hypodermoclysis, from 30 grains to 1 dram in a pint of warm sterile water; later I continue the drug in doses of from 10 to 30 grains given by the stomach in hot water, thrice daily; it may be continued indefinitely, but at the beginning is apt to cause nausea. Thirty grains of the lactate in a pint of warm water may be given directly into a vein. In a bad hopeless case of cancer of the throat I found that this drug materially lessened the pain.

(*To be continued*)

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF ORGANIZATION, POSTGRADUATE WORK, CONTRACT PRACTICE, INSURANCE FEES, LEGISLATION, ETC.

An Official Tri-State Journal

An experiment in medical society journal publication has been inaugurated by the state medical associations of Oregon, Washington and Idaho, a composite board representing the three associations having taken over the publication of *Northwest Medicine*. The first number issued by the new management has recently appeared. As this is the first journal to be published by a combination of state associations, its progress will be watched with interest. If the experiment is successful (and from the appearance of the first number there is no reason why it should not be) a solution will have been found of the problem of providing official medical journals, owned and published by physicians, for the smaller state associations which are not able on account of lack of numbers to publish separate journals of their own.

This number of *Northwest Medicine* is well prepared and printed and the size (12x8½) is commendable, the larger pages and wider columns being much more attractive both to the reader and the advertiser. The leading article on "The Relations of the Internal Secretions to Surgical Conditions," by Dr. Roswell Park of Buffalo, is the oration on surgery read before the joint meeting of the medical associations of the three states recently held at Seattle. Addresses by Dr. C. J. Fagan, president of the British Columbia Medical Association, Dr. J. L. Stewart, president of the Idaho State Medical Association, and Dr. Clarence A. Smith, president of the Washington State Medical Association, together with a well illustrated contribution on "The Complement Deviation Test in Syphilis," by Dr. Ralph C. Matson, of Portland, completes the original matter in the first issue. Half-tone portraits of the newly-elected presidents of the state associations, five pages of editorials, with the transactions of the house of delegates, news items and book reviews, complete the matter in the first number.

International Conference on Vital Statistics

The International Commission for the Revision of the Classification of Diseases and Causes of Death met at Paris, July 1 to 3. In order that the United States might be properly represented, a section was added to the act appropriating funds for the thirteenth U. S. census, authorizing the director of the census to appoint three commissioners with the standing of special agents of the government, one of whom was to be chosen from the United States Census Office, one from the medical profession, and one from the organized registration officials of the United States. Twenty-five hundred dollars was appropriated to defray their expenses. In accordance with this law, Hon. E. Dana Durand, Director of the Census, appointed Dr. Cressy L. Wilbur, chief statistician for vital statistics of the Census Bureau; Dr. Frank P. Foster, chairman of the Committee on Nomenclature and Classification of Diseases of the American Medical Association; and Dr. Wilmer R. Batt, of Pennsylvania, chairman of the Committee on Classification of Causes of Death of the Section on Vital Statistics of the American Public Health Association. Unfortunately, Dr. Foster, who was appointed to represent the medical profession, was unable to attend the conference. Drs. Wilbur and Batt were present, also Dr. Frank L. Pleadwell, U. S. N., Dr. H. D. Geddings, Asst. Surgeon-General U. S. P. H. and M.-H. S., Prof. Walter F. Willcox of Cornell University, and Dr. William H. Guilfoy, registrar of records of the City of New York.

The commission met July 1 to 3 in the Ministry of the Interior. Twenty-three countries were represented. The utmost harmony was manifested, the desire being to subordinate the individual views of the delegates to the general good. A number of recommendations presented by the American delegates were approved, especially one providing for a reclassification of deaths from violent causes.

The proceedings of the commission, as well as the revised nomenclature, is now being printed, it being anticipated that the stomach of its contents previous to the patient retiring; this is more beneficial than to leave the material in the stomach until morning. Another point which has guided me somewhat in the use of lavage is nausea. This paper has strengthened my belief in the fact that the lavage tube has been used too frequently, and, aside from its use as a means of diagnosis, I believe it will be used less frequently in the future.

Dr. Frank Smithies, Ann Arbor: I cannot agree with Dr. Aaron as to the quantity of material used for the lavage. From a somewhat extensive experience in washing out stomachs, I have come to the conclusion that large quantities of water may be used, if such quantities of water are regulated at the time of entrance into the stomach. This is done by means of the common-glass irrigator, marked off in liters, half-liters or quarts, as the case may be. Large quantities are frequently necessary, provided they are removed, and the stomach is not tested to its limit. It has been a common experience of people who have washed their stomachs that small quantities of liquid introduced into the stomach frequently empty the stomach only partially, as in the case of hour-glass stomach. It is only at the end of lavage, and with large quantities of solution, that it is possible to wash out the material from the second chamber, as it were, and send the patient home with a comparatively clean stomach. Again, in cases of marked dilatation, with retention, whether the retention is due to a new growth or to a stricture of the pylorus, by the use of small quantities of lavage liquid one only washes the top off. The most important part of lavage is the end lavage, because frequently retained contents, such as mucus, are obtained, and frequently tissue bits and things which are important bacteriologically and otherwise. The whole question of gastric lavage as a therapeutic measure rests on diagnosis. I have not found autolavage successful.

Dr. B. A. Shepard, Plainwell: I want to emphasize the point brought out with regard to the use of the stomach pump in neurotic cases. It is sometimes amusing to see the mental effect of leaving a stomach pump in the room. I have known of several patients who had had excessive vomiting for several weeks having been cured simply by the physician exhibiting the stomach pump in the sick-room; or by washing out the stomach of neurotics when the stomach was involved. Autolavage is important. Its effects are the stimulation of the musculature of the stomach forcing the contents into the bowel.

Dr. Johann Flinterman, Detroit: Many cases of dilatation of the stomach after surgical operations can be relieved by lavage. I have applied it in cases of ileum, in which there was fecal vomiting, and in which after the application of the stomach tube relief was afforded. Again, the symptoms of strangulation in cases of hernia are sometimes relieved by lavage. It is a valuable remedy in actual dilatation of the stomach, as well as in cases of strangulated hernia or intestinal incarceration, or obstruction in which operation is sometimes refused.

Dr. Charles D. Aaron, Detroit: If a patient who has stenosis of the pylorus is not improving, but constantly losing weight, is not turned over to a surgeon for operation we are likely to lose him. I cannot agree with Dr. Smithies in the use of large quantities of water in cases of dilatation of the stomach; I do not think it necessary to use large quantities of water at any time. In a case of dilatation one will usually find a pint or more of fluid in the stomach to begin with, and it is necessary to remove the liquid contents from the stomach, and to use from 6 to 8 ounces of water at a time, which will be found sufficient. That obtains also in cases before operation. It is certainly harmful to put water into the stomach, overdistend the musculature and expect Nature to contract the muscle perfectly, or at the time one wishes to feed the patient again. Dr. Flinterman's remarks on acute dilatation are well taken. It is the only method we have of bringing about recovery in cases of acute dilatation of the stomach following operations, but even then there is a transudation of the liquid elements of the blood into the stomach, and it is necessary at first to remove the liquid in the stomach, and then add small quantities and wash it out.

(*To be continued*)

MEDICAL SOCIETY OF THE MISSOURI VALLEY

Twenty-second Annual Meeting, held at Council Bluffs, Iowa, Sept. 9-10, 1909

The president, Dr. C. B. Hardin, Kansas City, Mo. in the chair.

Officers Elected

The following officers were elected for the ensuing year: President, Dr. A. B. Somers, Omaha, Nebr.; first vice-president, Dr. C. R. Woodson, St. Joseph, Mo.; second vice-president, Dr. Flavel B. Tiffany, Kansas City, Mo.; secretary, Dr. Charles Wood Fassett, St. Joseph, Mo., re-elected; treasurer, Dr. T. B. Lacey, Council Bluffs, Iowa, re-elected.

Omaha, Nebr., was selected as the place for holding the semiannual meeting in March, 1910.

Dr. Hardin in his presidential address, offered suggestions with reference to the future conduct and improvement of the society.

Diagnosis and Treatment of Gastric Ulcer with Especial Reference to the Lenhartz Diet

Dr. Leroy Crummer, Omaha: We can claim the following advantages for the Lenhartz treatment: First, it is more comfortable for the patient. Second, there is less loss of weight and nutrition. Third, the period of return to normal diet is shorter. Fourth, the tendency to relapse is less. Till the last few years, the treatment has always been medical, but recently surgical treatment has slipped into the foreground to a great extent. The most conservative surgeons have generally advised operation only after medical means have failed, but that even these restrictions are not enough is now recognized. I have had the opportunity to carry out the Lenhartz treatment in eight cases of gastric ulcer, five of which were comparatively simple cases, and the treatment was successful without modifying any of the details. One patient went through the treatment with seeming complete success and left the hospital greatly improved in weight and strength, but died suddenly one month later with some acute abdominal trouble, probably perforative peritonitis. The other two patients, in addition to the clear ulcer condition, presented severe anemia and signs of pyloric obstruction. For the results of pyloric ulcer, surgical treatment is often demanded, and in general the opinion has been that operation is indicated in: First, chronic ulcer *per se;* second, acute hemorrhage; third, perforation; fourth, pyloric stenosis. The statement is often made that when medical treatment fails in chronic ulcer, a gastroenterostomy or other operation should be done. This indication, I think, should be revised and stated as follows: No operation should be done in chronic ulcer till the patient has had the benefit of a careful trial with the Lenhartz treatment.

DISCUSSION

Dr. John P. Lord, Omaha: I recall several cases of gastric ulcer in men who are now doing well without having undergone surgical intervention. I speak of this to emphasize the success which attends the expectant treatment of these cases. However, when an operation is indicated in gastric ulcer, it should be performed.

Dr. W B. Deffenbaugh, St. Joseph Mo.: In the medical treatment of gastric ulcer it is important to prescribe a diet which is free from irritating material. The average diet contains many things that are imperfectly masticated; they pass over the inflamed area, or through the pylorus, and keep up a mechanical disturbance.

Dr. R. C. Moore, Omaha: In my experience, comparatively few cases present the classical symptoms of gastric ulcer, but when we have one of these cases, diet is the main thing to consider. I do not resort to feeding by the rectum. I keep the patient as quiet as possible, maintain the action of the different secretory organs as best I can and place the patient on such food as can be digested. Milk should be the main article of diet. When the case takes on a surgical aspect, operation should be considered, and performed if necessary.

Dr. W. L. Ross, Omaha: Gastric troubles are functional and not organic, and we should not be in too great haste in saying that this or that patient has ulcer of the stomach,

Rhode Island July Report

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Cornell University Medical College	(1909)		90.1
Jefferson Medical College	(1909)		80.8
FAILED			
Baltimore Medical College	(1907)		74.7

Marriages

Ruth Vail, M.D., and Albert Taylor Snow, both of Chicago, September 7.

Herman J. Berger, M.D., to Miss Margaret Ziegler, at Baltimore, September 7.

Ralph Tousey, M.D., to Miss Clara S. Briner, both of New York City, September 7.

Henry C. Watt, M.D., to Miss Marjorie Palmer, both of Colorado Springs, September 14.

William Hope Smith, M.D., U. S. Army, to Miss Helen Davidson, at San Francisco, August 3.

Roswell C. Sartell, M.D., Eldred, Pa., to Miss Jeannette M. Lockard, of Philadelphia, April 21.

William Vincent Pascual, M.D., Brooklyn, to Miss Beatrice Roche, of Deal, N. J., September 10.

Charles Edward Conduff, M.D., to Miss Annie Childress, both of Riner, Va., at Bristol, Tenn., September 11.

Victor Mackay Daly, M.D., to Miss Violette Berry Helm, both of Pontiac, Ill., at St. Paul, Minn., September 8.

Byron G. R. Williams, M.D., Paris, Ill., to Miss Margaret Elizabeth Mahoney, of Lexington, Ky., September 8.

Francis Alphonso Mantz, M.D., Philadelphia, to Miss Martha Mabel Yule, of Owen Sound, Ont., September 9.

Paul S. Morrison, M.D., Rushville, Mo., to Miss Bertha Chapman, of St. Joseph, Mo., at Atchison, Kan., August 25.

Samuel Sayre Rodman, M.D., U. S. Navy, to Miss Marjorie Drayton Memminger, at Flat Rock, N. C., August 27.

William T. Owen, M.D., Clarksburg, W. Va., to Miss Nellie Virginia Martin, of Bridgeport, W. Va., at Parkersburg, W. Va., September 4.

Deaths

Bernard Douglas Eastman, M.D. College of Physicians and Surgeons, New York City, 1862; a member of the Kansas Medical Society and the American Medico-Psychological Association; founder of the New England Psychological Society; from 1862 to 1865 assistant at the New Hampshire Hospital for the Insane, Concord; from 1865 to 1872, assistant physician at the Government Hospital for the Insane, Washington, D. C.; from 1872 to 1879, superintendent of the Worcester (Mass.) Lunatic Hospital, Lake Quinsigamond; for seventeen years superintendent of the Topeka State Hospital; professor of materia medica and therapeutics, and psychiatry in Kansas Medical College; an authority on insanity and the building and management of hospitals for the insane; died at his home in Topeka, September 11, from heart disease, aged 73.

William Thayer Smith, M.D. Dartmouth Medical School, Hanover, N. H., 1878; New York University, New York City, 1879; LL.D. Dartmouth, 1897; a member of the American Medical Association, American Academy of Medicine and American Association for the Advancement of Science; dean, professor emeritus of physiology and professor of clinical surgery in Dartmouth Medical School; surgeon to the Mary Hitchcock Memorial Hospital, Hanover, and author of textbooks on physiology and hygiene; died at his home in Hanover, N. H., September 17, from cerebral hemorrhage, aged 70.

David Finney Stuart, M.D. Jefferson Medical College, Philadelphia, 1859; chief surgeon of the Houston and Texas Central and Houston East and West Texas railroads from 1878-1895; president of the Houston Infirmary Sanitarium; formerly president of the board of trustees of Texas Medical College; assistant surgeon of the Tenth Texas Infantry and senior surgeon of Granberry's Texas Brigade in the Civil War; in 1871 vice-president and two years later president of the State Medical Association of Texas; died at his home in Houston, September 8, aged 76.

William Francis Mitchell, M.D. University of Michigan, Ann Arbor, 1868; a member of the American Medical Association; formerly president of the Schuyler County (Mo.) Medical Society; a member of the American Public Health Association, American Association for the Advancement of Science, and Northeast Missouri Medical Association; local surgeon at Lancaster for the Burlington System, and a member of the local board of U. S. pension examining surgeons; died at his home September 11, aged 67.

Howell Emolyn Davies, M.D. Rush Medical College, Chicago, 1902; a member of the American Medical Association; fellow in bacteriology, University of Chicago, 1897-1900; and instructor in gynecology in his alma mater in 1902 and 1903; died at his home in Emporia, Kan., August 26, from typhoid fever, aged 38.

Walter B. Batcheller, M.D. Northwestern University Medical School, Chicago, 1900; a member of the State Medical Society of Wisconsin; for four years a medical missionary in Corea and China, and since his return a practitioner of Madison and Cable, Wis., died in the Madison General Hospital, September 10, aged 41.

William Thomas Gardner, M.D. Physio-Medical Institute, Cincinnati, 1871; for five years superintendent of the Oddfellows Orphans' Home, Checotah, Okla.; a member of the city council and afterward mayor of Ardmore, Okla.; died at his home in that city, September 4, from nephritis, aged 60.

John Holmes Hand, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1870; of Dias Creek, N. J.; while driving across the tracks of the West Jersey and Seashore Railroad at Cape May Court House, N. J., September 8, was struck by a train and instantly killed, aged 64.

Stephen Neal, M.D. Atlanta (Ga.) Medical College, 1886; of Cordele, Ga.; formerly of Talbotton, Ga.; who invented a new process of extracting turpentine which has said to have revolutionized that industry; died in the Cordele Sanitarium, September 10, after an operation for appendicitis, aged 48.

Gustave McFadden, M.D. Albany (N. Y.) Medical College, 1864; assistant city assessor of Chanute, Kan.; clerk of Neosho county from 1878 to 1880, and deputy register of deeds from 1882 to 1884; died suddenly in Manitou, Colo., August 19, from acute gastritis, aged 71.

Charles Timothy Newkirk, M.D. University of the Victoria College, Coburg, Ont., 1864; a member of the Michigan State Medical Society, and a surgeon of volunteers during the Spanish-American War, died at his home in Bay City, September 16, from heart disease, aged 68.

James Tampson Valliant, M.D. Texas Medical College, Galveston, 1874; of Killeen. Texas; a member of the State Medical Association of Texas; died at the home of his daughter in Santa Ana. Cal., July 17, from the effects of a carbuncle on the neck, aged 69.

Pierson C. Curtis, M.D. Albany (N. Y.) Medical College, 1884; a member of the American Medical Association; of Round Lake, N. Y.; was killed in a collision between his automobile and an electric car at Round Lake, September 6, aged 53.

Levin Clarke Royster, M.D. Louisville (Ky.) Medical College, 1884; a member of the American Medical Association; died at his home in Smith's Mills, Ky., August 14, from the effects of a fall from a hayloft, in which he fractured the cervical spine, aged 49.

William Henry Russell, M.D. College of Physicians and Surgeons, Boston, 1891; Tufts Medical School, Boston, 1895; a member of the Massachusetts Eclectic Medical Society; died at his home in Ipswich, Mass., June 6, from cerebral hemorrhage, aged 49.

James Brown Burnet, M.D. New York University, New York City, 1866; a member of the board of trustees of the New Jersey Historical Society and a medical cadet during the Civil War; died at his home in Newark, N. J., September 7, aged 66.

Henry Ziesing, M.D. University of Giessen, Germany, 1851; Illinois Army Board, 1865; a surgeon of volunteers during the Civil War; for many years a practitioner of Peru, Ill.; died at his home in that city, September 11, from paralysis, aged 80.

a revised version will be available for the use of officials in compiling the decennial Federal census for 1910. An official version is to be prepared in the language of each country represented, the English translation being in the hands of Dr. Wilbur and Dr. G. W. Knibbs, statistician for Australia. In recognition of the work of the American delegates, Dr. Wilbur was made vice-president of the international commission and presided over one of the sessions.

On July 4, the delegates were received by the President of France, the week following they also participated in the session of the International Statistical Institute. The next session of the commission will be held under the auspices of the French government unless, in view of the great progress of American vital statistics in the past decade and the important rôle played in revision by the American delegates, it is possible to arrange for the meeting of the third decennial conference at Washington.

In the absence of Dr. Frank P. Foster, the following resolutions were adopted by the American representatives:

Resolved, That the official delegates of the United States to the Second Decennial Revision of the International Classification of Causes of Death desire to express their sincere regret that Dr. Frank P. Foster, chairman of the Committee on Nomenclature of the American Medical Association, was unable to be personally present during the session of the commission at Paris, July 1-3, 1909, and their high sense of appreciation of the services rendered by his and associated committees in the preliminary suggestions,[1] which have so greatly facilitated the work of the American delegates.

F. L. Pleadwell,
Wilmer R. Batt,
H. D. Geddings,
Wm. H. Guilfoy,
Walter F. Willcox,
Cressy L. Wilbur.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

DR. JOHN H. BLACKBURN, DIRECTOR
Bowling Green, Kentucky

[The Director will be glad to furnish further information and literature to any county society desiring to take up the course.]

First Month—Fourth Weekly Meeting

Diseases of Cerebral Veins and Sinuses

Primary, Marantic, Thrombosis: Etiology.—Age, prolonged illness, cachexiæ. Symptoms.—Preceding disease, venous stasis, local edema, mental symptoms.

Secondary, Infective, Thrombosis: Etiology.—Middle-ear disease, fractures, infections in nose, mouth and pharynx, erysipelas, anthrax. Symptoms.—Preceding infection, local symptoms, brain symptoms, septicemia.

Cerebral Palsies of Children

Etiology: (a) Prenatal conditions, lack of development, prematurity, porencephalia; (b) accidents at birth, protracted labors, vertex and breech presentations, abuse of forceps; (c) postnatal causes, age, infectious diseases, injuries.

Symptoms: Hemiplegic cases. Sudden onset, convulsions, loss of consciousness, development of hemiplegia, spasticity, exaggerated reflexes, contractures, attitude and gait. Atrophy of affected side. Athetosis. Tendency to epilepsy. Diplegic cases, may be paraplegic. Usually of prenatal or birth origin. Slow development of cranium, convulsive seizures, rigidity and contractions, upper and lower limbs involved. Lack of mental development, tendency to epilepsy and idiocy.

Monthly Meeting

Varieties of Aphasia and Signficance of Each.
The Localization of the Lesion in Intracerebral Hemorrhage.
Early Diagnosis and Treatment of Cerebral Palsies of Children.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arizona: Phœnix, October 4-5. Sec., Dr. Ancil Martin.
Colorado: Capitol, Denver, October 5. Sec., Dr. S. D. VanMeter, 1723 Tremont St.
Georgia: Regular, Capitol Bldg., Atlanta, October 12. Sec., Dr. E. R. Anthony, Griffin. Homeopathic: Atlanta, October 4. Sec., Dr. R. E. Hinman, 153 Whitehall St.
Idaho: Boise, October 5-6. Sec., Dr. W. F. Howard, Pocatello.
Illinois: Coliseum Annex, Chicago, October 20-22. Sec., Dr. J. A. Egan, Springfield.
Kansas: Topeka, October 12. Sec., Dr. F. P. Hatfield, Olathe.
Louisiana: New Orleans, October 1-2. Sec., Dr. Felix A. Larue, 211 Camp St.
Michigan: Lansing, October 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
Minnesota: State University, October 5. Sec., Dr. W. S. Fullerton, 214 American National Bank Bldg., St. Paul.
Mississippi: Jackson, October 12. Sec., Dr. S. H. McLean.
Montana: Capitol, Helena, October 5. Sec., Dr. W. C. Riddell.
New Jersey: State House, Trenton, October 19-20. Sec., Dr. E. L. B. Godfrey, Camden.
New Mexico: Santa Fe, October 11-12. Sec., Dr. J. A. Massie.
North Dakota: Grand Forks, Oct. 5-7. Sec., Dr. H. M. Wheeler.
Oklahoma: Ione Hotel, Guthrie, October 13. Sec., Dr. Frank P. Davis, Enid.
Rhode Island: Room 313, State House, Providence, October 7-8. Sec., Dr. Gardner T. Swarts.
Utah: Room 207, City and County Bldg., Salt Lake City, October 4-5. Sec., Dr. G. F. Harding, 310 Templeton Bldg.
Wyoming: Laramie, October 20-22. Sec., Dr. S. B. Miller.

Illinois April and May Reports

Dr. J. A. Egan, secretary of the Illinois State Board of Health, reports the written examinations held at Chicago, April 15-17, and at East St. Louis, May, 1909. The number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75.

At the examination held in April, the total number of candidates examined was 126, of whom 111 passed, 12 failed and 1 withdrew. Two candidates did not complete the examination. The following colleges were represented:

College.	Year Grad.	Total No. Exam'd.
PASSED		
George Washington University	(1908)	1
Bennett Medical College	(1909)	2
Chicago College of Medicine and Surgery	(1909)	33
Illinois Medical College	(1905) (1908) (2, 1909)	4
National Medical University, Chicago	(1906)	1
Northwestern Univ. Med. School	(1901) (1908) (10, 1909)	12
Coll. of Phys. and Surg., Chicago	(1905) (1908) (27, 1909)	29
Rush Medical College	(1909)	19
Jenner Medical College	(1909)	2
Medical College of Indiana	(1898)	1
Johns Hopkins University	(1906)	1
Tulane University of Louisiana	(1899)	1
St. Louis College of Physicians and Surgeons	(1908)	1
Jefferson Medical College	(1892) (1908)	2
University of Pennsylvania	(1908)	1
Trinity Medical College, Toronto, Canada	(1903)	1
FAILED		
Hahnemann Medical College and Hospital	(1884)	1
College of Med. and Surg., Physiomedical, Chicago	(1908)	1*
Illinois Medical College	(1908)* (1909)	2
National Medical University, Chicago	(1907)	1*
College of Physicians and Surgeons, Chicago	(1901)	1
Keokuk Med. College, Coll. of Phys. and Surg.	(1908)	1
Hospital College of Medicine, Louisville	(1904)	1†
Barnes Medical College	(1908)	1*
St. Louis College of Physicians and Surgeons	(1906)	1†
Meharry Medical College	(1907)	1*
Queen's University, Kingston, Ontario	(1886)	1

At the examination held in May, the total number of candidates examined was 133, of whom 115 passed and 18 failed. The following colleges were represented:

College.	Year Grad.	Total No. Exam'd.
PASSED		
d Hospital, Chicago	(1909)	1
rgeons, Chicago	(1909)	1
ical School	(1909)	2
	(1909)	1
	(1909)	25
of Missouri	(1909)	1
	(1909)	28
s and Surgeons	(1909)	24
University of Missouri	(1909)	1
is	(1909)	28
innati	(1900)	1
	(1909)	[illegible]
	(1905)	1
FAILED		
Barnes Medical College	(1908)* (4, 1909)	5
St. Louis College of Physicians and Surgeons	(1906)† (1908)* (1908)† (9, 1909)	12
Washington University, St. Louis	(1909)	1

* Third examination.
† Second examination.

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[1] Those who desire to read the report presented to the American Medical Association by its Committee on Nomenclature and Classification of Diseases, of which Dr. Foster was chairman, will find it in The Journal, June 19, 1909, page 2058.

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ROSWELL C. SARTELL, M.D., Eldred, Pa., to Miss Jeannette M. Lockard, of Philadelphia, April 21.

WILLIAM VINCENT PASCUAL, M.D., Brooklyn, to Miss Beatrice Roche, of Deal, N. J., September 10.

CHARLES EDWARD CONDUFF, M.D., to Miss Annie Childress, both of Riner, Va., at Bristol, Tenn., September 11.

VICTOR MACKAY DALY, M.D., to Miss Violette Berry Helm, both of Pontiac, Ill., at St. Paul, Minn., September 8.

BYRON G. R. WILLIAMS, M.D., Paris, Ill., to Miss Margaret Elizabeth Mahoney, of Lexington, Ky., September 8.

FRANCIS ALPHONSO MANTZ, M.D., Philadelphia, to Miss Martha Mabel Yule, of Owen Sound, Ont., September 9.

PAUL S. MORRISON, M.D., Rushville, Mo., to Miss Bertha Chapman, of St. Joseph, Mo., at Atchison, Kan., August 25.

SAMUEL SAYRE RODMAN, M.D., U. S. Navy, to Miss Marjorie Drayton Memminger, at Flat Rock, N. C., August 27.

WILLIAM T. OWEN, M.D., Clarksburg, W. Va., to Miss Nellie Virginia Martin, of Bridgeport, W. Va., at Parkersburg, W. Va., September 4.

Deaths

Bernard Douglas Eastman, M.D. College of Physicians and Surgeons, New York City, 1862; a member of the Kansas Medical Society and the American Medico-Psychological Association; founder of the New England Psychological Society; from 1862 to 1865 assistant at the New Hampshire Hospital for the Insane, Concord; from 1865 to 1872, assistant physician at the Government Hospital for the Insane, Washington, D. C.; from 1872 to 1879, superintendent of the Worcester (Mass.) Lunatic Hospital, Lake Quinsigamond; for seventeen years superintendent of the Topeka State Hospital; professor of materia medica and therapeutics, and psychiatry in Kansas Medical College; an authority on insanity and the building and management of hospitals for the insane; died at his home in Topeka, September 11, from heart disease, aged 73.

William Thayer Smith, M.D. Dartmouth Medical School, Hanover, N. H., 1878; New York University, New York City, 1879; LL.D. Dartmouth, 1897; a member of the American Medical Association, American Academy of Medicine and American Association for the Advancement of Science; dean, professor emeritus of physiology and professor of clinical surgery in Dartmouth Medical School; surgeon to the Mary Hitchcock Memorial Hospital, Hanover, and author of textbooks on physiology and hygiene; died at his home in Hanover, N. H., September 17, from cerebral hemorrhage, aged 70.

David Finney Stuart, M.D. Jefferson Medical College, Philadelphia, 1859; chief surgeon of the Houston and Texas Central and Houston East and West Texas railroads from 1878-1895; president of the Houston Infirmary Sanitarium; formerly president of the board of trustees of Texas Medical College; assistant surgeon of the Tenth Texas Infantry and senior surgeon of Granberry's Texas Brigade in the Civil War; in 1871 vice-president and two years later president of the State Medical Association of Texas; died at his home in Houston, September 8, aged 76.

William Francis Mitchell, M.D. University of Michigan, Ann Arbor, 1868; a member of the American Medical Association; formerly president of the Schuyler County (Mo.) Medical Society; a member of the American Public Health Association, American Association for the Advancement of Science, and Northeast Missouri Medical Association; local surgeon at Lancaster for the Burlington System, and a member of the local board of U. S. pension examining surgeons; died at his home September 11, aged 67.

Howell Emolyn Davies, M.D. Rush Medical College, Chicago, 1902; a member of the American Medical Association; fellow in bacteriology, University of Chicago, 1897-1900; and instructor in gynecology in his alma mater in 1902 and 1903; died at his home in Emporia, Kan., August 26, from typhoid fever, aged 38.

Walter B. Batcheller, M.D. Northwestern University Medical School, Chicago, 1900; a member of the State Medical Society of Wisconsin; for four years a medical missionary in Corea and China, and since his return a practitioner of Madison and Cable, Wis., died in the Madison General Hospital, September 10, aged 41.

William Thomas Gardner, M.D. Physio-Medical Institute, Cincinnati, 1871; for five years superintendent of the Odd-fellows Orphans' Home, Checotah, Okla.; a member of the city council and afterward mayor of Ardmore, Okla.; died at his home in that city, September 4, from nephritis, aged [illegible]

John Holmes Hand, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1870; of Dias Creek, N. J.; while driving across the tracks of the West Jersey and Seashore Railroad at Cape May Court House, N. J., September [illegible] was struck by a train and instantly killed, aged 64.

Stephen Neal, M.D. Atlanta (Ga.) Medical College, [illegible] of Cordele, Ga.; formerly of Talbotton, Ga.; who invented a new process of extracting turpentine which has said to have revolutionized that industry; died in the Cordele Sanitarium, September 10, after an operation for appendicitis, aged [illegible]

Gustave McFadden, M.D. Albany (N. Y.) Medical College, 1864; assistant city assessor of Chanute, Kan.; [illegible] of Neosho county from 1878 to 1880, and [illegible] from 1882 to 1884; died suddenly in [illegible] 19, from acute gastritis, aged 71.

Charles Timothy Newkirk, M.D. [illegible] College, Coburg, Ont., 1864; a member of the [illegible] Medical Society, and a surgeon of volunteers during the Spanish-American War, died at his home in Bay City, [illegible] 16, from heart disease, aged 68.

James Tampson Valliant, M.D. Texas Medical College, Galveston, 1874; of Killeen, Texas; a member of the State Medical Association of Texas; died at [illegible] in Santa Ana, Cal., July 17, from [illegible] the neck, aged 69.

Pierson C. Curtis, M.D. Albany (N. Y.) Medical College, 1884; a member of the American Medical Association; of Round Lake, N. Y.; was killed in [illegible] automobile and an electric car at Round Lake, September [illegible] aged 53.

Levin Clarke Royster, M.D. Louisville (Ky.) Medical College, 1884; a member of the American Medical Association; died at his home in Smith's Mills, Ky., August 14, from [illegible] a fall from a hayloft, in which he fractured the [illegible] aged 49.

William Henry Russell, M.D. College of Physicians and Surgeons, Boston, 1891; Tufts Medical School, Boston, [illegible] member of the Massachusetts Eclectic Medical Society; died at his home in Ipswich, Mass., June 6, from cerebral hemorrhage, aged 40.

James Brown Burnet, M.D. New York University, New York City, 1866; a member of the board of trustees of the New Jersey Historical Society and a medical cadet during the Civil War; died at his home in Newark, N. J., September [illegible]

Henry Ziesing, M.D. University of [illegible] Illinois Army Board, 1865; a surgeon of volunteers [illegible] Civil War; for many years a practitioner of [illegible] his home in that city, September 11, from [illegible]

William A. Briant, M.D. Missouri Medical College, St. Louis, 1883; a member of the Arkansas Medical Society; for several terms a member of the Arkansas legislature; died at his home in Hope, September 4, from cancer of the kidney, aged 47.

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Oliver Dwight Paine, M.D. American College of Medicine in Pennsylvania and Eclectic Medical College of Philadelphia, 1860; a practitioner of Youngstown, Ohio since 1848; died at his home, September 1, from senile debility, aged 90.

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William E. Haines, M.D. University of Pennsylvania, Philadelphia, 1868; a member of the American Medical Association, and a veteran of the Civil War, died at his home in Bushnell, Ill., September 12, aged 60.

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Axel Otto Lindfors, M.D. professor of gynecology and obstetrics in the University of Upsala, Sweden; an able writer in his specialties; a man of letters and a lyric poet; died suddenly August 18, at Düren, Rhine Provinces, Germany, aged 57.

Book Notices

Epoch-Making Contributions to Medicine, Surgery and the Allied Sciences. Collected by C. N. B. Camac, A.B., M.D. Cloth. Pp. 435, with illustrations. Price, $4. Philadelphia: W. B. Saunders Co., 1909.

This work consists mainly of reprints of those articles which first brought to the notice of the scientific world the epoch-making observations of such men as Lister, Harvey, Auenbrugger, Laennec, Jenner, Morton and Holmes. There are also given brief biographic sketches of the observers themselves. The collector of these papers calls attention to the fact that the teachings of the original observers are by no means obsolete, a point that will forcibly impress itself on the reader. Such a resurrection of communications that have in many cases been buried in a mass of more or less indifferent literature is an achievement for which Dr. Camac deserves the thanks of the medical profession. The teachings of great authorities in other branches of science and art have long been accessible; that the same has not been true in medicine is of no great credit to the profession. The selection and arrangement of the material is all that could be wished. The physician who is interested in the "scientific side of the investigator's mind" will not be willing to be without the book.

General Surgery. By Ehrich Lexer, M.D., Professor of Surgery, University of Berlin. Translated from Second German Edition by Dean Lewis, M.D., Instructor in Surgery, Rush Medical College. Edited by Arthur Dean Bevan, M.D., Professor of Surgery, Rush Medical College. Cloth. Pp. 1041, with illustrations. Price, $6.00. New York: D. Appleton & Co., 1908.

This volume is an English translation from the German of that part of Lexer's work which treats of the general principles underlying the practice of surgery. The chief object in presenting this translation was to furnish the English-reading student with the most authoritative volume, containing latest additions to the very essential subjects usually grouped under the title of general surgery; and in the selection of Lexer's work the translators have made no mistake. Every practitioner must always remain a student and there are no subjects in medicine about which any one man's knowledge is so complete and so perfect that it is unnecessary to review constantly in order to keep well informed. Hence a work like this on so-called principles while primarily intended for students, is of just as much value to the practitioner. The work has been considerably improved by numerous additions made by the American editor, notable among which are the chapters on nitrous oxid gas anesthesia, on blood examinations, on blastomycosis, etc. The work is a creditable one and ought to be welcomed by the practitioner as well as the undergraduate.

Surgery, Its Principles and Practice. By various authors. Edited by William Williams Keen, M.D., LL.D., Emeritus Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia, and John Chalmers DaCosta, M.D., Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical College, Philadelphia. Vol iv. Cloth. Pp. 1194, with illustrations. Price, $7.00. Philadelphia: W. B. Saunders Co., 1908.

In this volume of Keen's system are discussed the surgery of the intestines, including the rectum and anus and hernia; surgery of the genitourinary organs; surgery of the eye and of the ear; military, naval and tropical surgery and the influence of race, sex and age in surgical affections. The author selected to write on each particular subject in question is recognized as one eminently qualified for the task.

It is impossible to review each chapter *in extenso*, but attention is directed to a few special features. The absence of any mention of the injection treatment of hernia is to be regretted, not because of any merit which it may possess, but because its great popularity with a certain class makes it desirable that its demerits should be exposed.

The chapter on examination of the urine in relation to kidney disease will be a shock to many enthusiasts in that line, but it is a practical exposition of the subject by a thoroughly practical man. Under surgery of the genitourinary organs, the chapters on the bladder and the prostate deserve special mention, while under surgery of the intestines, of special interest are the remarks on inflammation of the various diverticula and the chapter on the appendix. As might be expected from the subjects, this volume is perhaps thus far the most interesting of this very excellent system.

Introduction a l'Etude Clinique et a la Pratique des Acco[illegible]
Pa[illegible] a.
tr[illegible] Steinhell.

This book was out of print for some time, though a reprint was published in 1904. One of the authors, Varnier, has died, and this new edition has been prepared by Farabeuf. The defective illustrations have been redrawn, though Farabeuf states that there are still some with which he is dissatisfied. It is unfortunate that there is no English translation of this work, but in any case the book will probably be of more value to teachers of obstetrics than to general practitioners. Farabeuf says that the work is largely the result of experiments in the dissecting room on the bodies of women and infants preserved in gelatin to keep the tissues supple. Chapter 1 takes up the pelvo-genital canal, measurements of the fetal head and the various presentations. Chapter 2 discusses the mechanism of labor in vertex, breech and face presentations and positions. Chapters 3, 4 and 5 take up in turn vaginal measurements and various presentations, manual extraction and podalic version. A great deal of space, almost half the book, details the use of forceps.

Hints in Practical Urinalysis with Etiology and Symptoms of Some Important Genitourinary Diseases. Third Edition. By Charles C. Yarbrough, M.D., Therapist, Scientific Department, Frederick Stearns & Co. Paper. Pp. 77. Detroit, Mich.: Press of Frederick Stearns & Co.

Although this pamphlet is issued as an advertisement for the firm and is sent gratuitously to physicians who ask for it, the advertising of the firm is confined to a few pages in the back. The text is good and the pamphlet worth having. It summarizes well the principles and methods of urinalysis.

Miscellany

TUBERCULOSIS NOMENCLATURE AND CLASSIFICATION

A Committtee Report Approved by the American Sanatorium Association

By H. L. BARNES, Wallum Lake, R. I.; LAWRASON-BROWN, Trudeau, N. Y.; H. S. GOODALL, Lake Kushaqua, N. Y.; ESTES NICHOLS, Hebron, Me.; and L. ROSENBERG, Bedford Station, N. Y.

The committee appointed to consider carefully the classification adopted by the National Association for the Study and Prevention of Tuberculosis, to define exactly the terms employed therein, to formulate rules to insure a uniform method of examination; in short, to add to or to subtract from this classification, as the committee thought best, and finally to report its conclusions at this meeting of the society, begs leave to submit the following report.

This report is divided into several separate parts which deal with the various subjects assigned to the committee. The first section deals with the definition of terms employed in the classification; the second with the methods of examination that the committee would advise; the third with statistical reports of the sanatorium, a subject which alone renders this report of interest; the fourth discusses several mooted points; and the fifth includes the classification that we feel should be adopted by the sanatorium workers of America.

Inasmuch as many may not clearly hold in mind the classification adopted by the National Association for the Study and Prevention of Tuberculosis, it was thought best to include it in this report. It is as follows:

Classification

Incipient.—Slight initial lesion in the form of infiltration limited to the apex of one or both lungs or a small part of one lobe.

No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight).

Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest.

Expectoration usually small in amount or absent.

Tubercle bacilli may be present or absent.

Moderately Advanced.—No marked impairment of function, either local or constitutional. Localized consolidation moderate in extent with little or no evidence of destruction of tissue or disseminated fibroid deposits. No serious complications.

Far Advanced.—Marked impairment of function, local and constitutional. Localized consolidation intense, or disseminated areas of softening, or serious complications.

Acute Miliary Tuberculosis.—

Unimproved.—All essential symptoms and signs unabated or increased.

Improved.—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration usually present.

Arrested.—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.[1]

Apparently Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Definition of Terms

TERMS USED IN DEFINITION OF "INCIPIENT"

1. *Slight Constitutional Disturbance.*—Slight loss of appetite, of strength, of weight; lassitude; possibly slight acceleration of pulse or possibly slight elevation of temperature. The impairment of health may be so slight that the patient does not look or feel sick in the ordinary sense of the word.
2. *Slight Elevation of Temperature.*—Maximum temperature after rest for one hour, never over 99.5 to 100° F. by mouth (or 100.5 per rectum).
3. *Slight Acceleration of Pulse.*—Maximum pulse rate not over 90 after rest for one hour, sitting or lying, except when due to causes other than tuberculosis.
4. *Absence of Tubercle Bacilli.*—Each monthly examination (if the sputum be negative) to consist of a careful microscopic examination, with a mechanical stage, of two smears, devoting at least three minutes to each smear, made from selected particles (at least six from different parts) of the sputum on each of three successive days. The morning sputum should always be obtained, or, better, the minute bits that some arrested patients raise at very infrequent intervals. It is not yet deemed wise to insist on digestion and centrifugalization or on inoculation of guinea-pigs.
5. *Infiltration.*—Physical signs of, slight prominence of the clavicle, lessened movement of chest, narrowing of apical resonance with lessened movement of base of lung, slight or no change in resonance, distant or loud and harsh breathing, with or without some change in the rhythm (i. e., prolonged expiration), vocal resonance possibly slightly increased; or fine or moderately coarse râles present or absent. If sputum contain tubercle bacilli, any one of these.
6. *Apex.*—That portion of the lung situated above the clavicle and the third vertebral spine.
7. *A Small Part of One Lobe.*—An area of one or two intercostal spaces, or an area not exceeding 60 to 80 sq. cm. in extent, according to the size of the patient.

TERMS USED IN DEFINITION OF "MODERATELY ADVANCED"

8. *Marked Impairment of Function, Either Local or Constitutional.*—Local: Marked dyspnea on exertion, limiting seriously the patient's activity.
   Constitutional: Marked weakness, anorexia, tachycardia.
9. *Moderate Extent of Localized Consolidation.*—An area of one-half lobe or less, but may involve both apices; marked dulness, bronchial or decidedly broncho-vesicular

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[1] The length of time mentioned is, of course, somewhat arbitrary, but is intended to cover the cases which frequently occur, where the patients leave a sanatorium for various reasons, contrary to advise, after a stay of a few weeks, although all active symptoms may have ceased completely soon after entrance.

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Rush Medical College. Cloth. Pp. 1041, with illus
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called principles while primarily intended f
just as much value to the practitioner. T
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nitrous oxid gas anesthesia, on blood exam
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Introduction a l'Etude Clinique et a la Pratique des Accouchements: Anatomie—Présentations —Toucher—Manœuvres—Extraction du Par L. H. Farabeuf et Henri Varnier. Paper. Pp. 480, with illustrations. Price, $3.00. Paris: Georges Steinheil.

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Although this pamphlet is issued as an advertisement for the firm and is sent gratuitously to physicians who ask for it, the advertising of the firm is confined to a few pages in the back. The text is good and the pamphlet worth having. It summarizes well the principles and methods of urinalysis.

Miscellany

TUBERCULOSIS NOMENCLATURE AND CLASSIFICATION

A Committtee Report Approved by the American Sanatorium Association

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The committee appointed to consider carefully the classification adopted by the National Association for the Study and Prevention of Tuberculosis, to define exactly the terms employed therein, to formulate rules to insure a uniform method of examination; in short, to add to or to subtract from this classification, as the committee thought best, and finally to report its conclusions at this meeting of the society, begs leave to submit the following report.

This report is divided into several separate parts which deal with the various subjects assigned to the committee. The first section deals with the definition of terms employed in the classification; the second with the methods of examination that the committee would advise; the third with statistical reports of the sanatorium, a subject which alone renders this report of interest; the fourth discusses several mooted points; and the fifth includes the classification that we feel should be adopted by the sanatorium workers of America.

Inasmuch as many may not clearly hold in mind the classification adopted by the National Association for the Study and Prevention of Tuberculosis, it was thought best to include it in this report. It is as follows:

Classification

Incipient.—Slight initial lesion in the form of infiltration limited to the apex of one or both lungs or a small part of one lobe.

No tuberculous complications. Slight or no constitutional symptoms (particularly including gastric or intestinal disturbance or rapid loss of weight).

Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours, especially after rest.

Expectoration usually small in amount or absent.

Tubercle bacilli may be present or absent.

Moderately Advanced.—No marked impairment of function, either local or constitutional. Localized consolidation moderate in extent with little or no evidence of destruction of tissue or disseminated fibroid deposits. No serious complications.

Far Advanced.—Marked impairment of function, local and constitutional. Localized consolidation intense, or disseminated areas of softening, or serious complications.

Acute Miliary Tuberculosis.—

Unimproved.—All essential symptoms and signs unabated or increased.

Improved.—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration usually present.

Arrested.—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.[1]

Apparently Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Definition of Terms

TERMS USED IN DEFINITION OF "INCIPIENT"

1. *Slight Constitutional Disturbance.*—Slight loss of appetite, of strength, of weight; lassitude; possibly slight acceleration of pulse or possibly slight elevation of temperature. The impairment of health may be so slight that the patient does not look or feel sick in the ordinary sense of the word.
2. *Slight Elevation of Temperature.*—Maximum temperature after rest for one hour, never over 99.5 to 100° F. by mouth (or 100.5 per rectum).
3. *Slight Acceleration of Pulse.*—Maximum pulse rate not over 90 after rest for one hour, sitting or lying, except when due to causes other than tuberculosis.
4. *Absence of Tubercle Bacilli.*—Each monthly examination (if the sputum be negative) to consist of a careful microscopic examination, with a mechanical stage, of two smears, devoting at least three minutes to each smear, made from selected particles (at least six from different parts) of the sputum on each of three successive days. The morning sputum should always be obtained, or, better, the minute bits that some arrested patients raise at very infrequent intervals. It is not yet deemed wise to insist on digestion and centrifugalization or on inoculation of guinea-pigs.
5. *Infiltration.*—Physical signs of, slight prominence of the clavicle, lessened movement of chest, narrowing of apical resonance with lessened movement of base of lung, slight or no change in resonance, distant or loud and harsh breathing, with or without some change in the rhythm (i. e., prolonged expiration), vocal resonance possibly slightly increased; or fine or moderately coarse râles present or absent. If sputum contain tubercle bacilli, any one of these.
6. *Apex.*—That portion of the lung situated above the clavicle and the third vertebral spine.
7. *A Small Part of One Lobe.*—An area of one or two intercostal spaces, or an area not exceeding 60 to 80 sq. cm. in extent, according to the size of the patient.

TERMS USED IN DEFINITION OF "MODERATELY ADVANCED"

8. *Marked Impairment of Function, Either Local or Constitutional.*—Local: Marked dyspnea on exertion, limiting seriously the patient's activity.

   Constitutional: Marked weakness, anorexia, tachycardia.
9. *Moderate Extent of Localized Consolidation.*—An area of one-half lobe or less, but may involve both apices; marked dulness, bronchial or decidedly broncho-vesicular

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[1] The length of time mentioned is, of course, somewhat arbitrary, but is intended to cover the cases which frequently occur, where the patients leave a sanatorium for various reasons, contrary to advise, after a stay of a few weeks, although all active symptoms may have ceased completely soon after entrance.

breathing; markedly increased vocal resonance; râles usually present. These signs are to be sharply limited as to area instead of gradually shading into normal physical signs.

10. *Evidence of Destruction of Tissue.*—Presence of tubercle bacilli or elastic fibers in the sputum or the presence of the physical signs of a cavity. There are no absolutely certain physical signs of cavity but a combination of any four of the following signs is to be taken as indicative of a cavity: (1) cracked-pot note; (2) amphoric breathing; (3) intense whispering pectoriloquy; (4) a veiled puff or post-tussive suction; (5) bubbling or resonant râles. "Physical signs of softening" do not admit of any definition apart from that of cavity formation, and the term should not be used.

11. *Disseminated Fibroid Deposits.*—More or less localized areas of fibrous tissue, producing on physical examination, some change or dulness in the percussion note, more or less increase of vocal resonance, harsh, suppressed or broncho-vesicular breathing, râles sibilant or sonorous usually, but at times fine and moderately coarse.

12. *Serious Complications.*—These should be limited to tuberculous complications, such as meningitis, pharyngitis, laryngitis (except slight thickening in the posterior interarytenoid space, and superficial ulceration of a vocal cord), enteritis, peritonitis, nephritis, cystitis, orchitis, adenitis (unless very slight), etc.

TERMS USED IN DEFINITION OF "FAR ADVANCED"

13. *Intense Localized Consolidation.*—This term should be replaced by "marked consolidation of an entire lobe." "Marked consolidation" indicates dulness merging into flatness, bronchial or tubular breathing and other signs of consolidation as defined in Paragraph 10.

TERMS USED IN DEFINITION OF "APPARENTLY CURED"

14. *Constitutional Symptoms.*—These include elevation of temperature, loss of weight, loss of strength, night sweats, chills, tachycardia, cyanosis, loss of appetite, amenorrhea, etc.

15. *Physical Signs of a Healed Lesion.*—These may embrace every physical sign of infiltration or consolidation (see paragraphs 6, 10), with the exception of râles, which must be permanently absent, except possibly a few fine râles at the base, probably atelectatic in origin, and at one apex or over a small part of one lobe. Râles in the latter two places are to be heard only during the cough, at the end of a prolonged expiration, or during the inspiration which follows the cough.

TERMS USED IN DEFINITION OF "IMPROVED"

16. *Constitutional Symptoms Lessened or Entirely Absent.*—By this is meant an improvement in the general condition as shown either by a gain in *both* weight and strength or by reduction of previous febrile temperature to normal without loss of strength.

TERMS USED IN DEFINITION OF "UNIMPROVED OR PROGRESSIVE"

17. *Essential Symptoms and Signs.*—These include, among others, weight, strength, appetite, night sweats, hemoptysis, pleurisy, dyspnea, temperature, pulse-rate, dulness, changes in vocal resonance and respiratory movement, râles.

TABLE 1.—MODIFIED TURBAN SCHEME

Number.		Condition.	Extent of Physical Signs (Turban). Both Lungs.	Extent of Physical Signs (Turban). Each Lung.	Duration of Disease.	General Condition.	Digestion.	Range of Pulse, 7 Days on Admission, 2 Days on Discharge.	Av. Max. Temp., 7 Days on Admission, 2 Days on Discharge.	T. B.	T. B. Previous.	T. B. Residence.	Complications.	Tuberculin. Variety, No. of Days and Doses. Highest Dose in Grams.
2437	On admission.	Incipient...	I	R	6 months..	Favorable....	Impaired	80-102	98.9	O	....	O	....	....
	At discharge..	Ap. cured..	O	......	12 months..	Favorable....	Unimpaired..	78- 90	99.0	O	....	....	....	....
2439	On admission.	Mod. Adv...	I	R L	16 months..	Favorable....	Unimpaired..	80-100	99.6	+	....	+	....	....
	At discharge..	Arrested....	II	R	23 months..	Favorable....	Unimpaired .	80- 92	98.9	O	....	....	....	....
2440	On admission.	Mod. Adv ..	II	R¹ L²	4 months..	Unfavorable.	Unimpaired .	88-108	99.1	O	O	+	....	....
	At discharge..	Unimprv'd.	II	R¹ L²	11 months..	Unfavorable.	Unimpaired .	72-130	99.4	+	....	....	....	....
2442	On admission.	Mod. Adv...	II	R¹ L²	9 months..	Favorable....	Unimpaired .	80-100	99.3	O	....	O	....	....
	At discharge..	Ap. cured..	I	R	20 months..	Favorable..	Unimpaired .	80- 88	98.8	O	....	....	....	....
2443	On admission.	Mod. Adv..	II	R¹ L¹	4 months..	Favorable....	Unimpaired .	80-100	99.4	O	O	+	....	....
	At discharge..	Failed......	III	R³ L²	12 months..	Favorable....	Unimpaired .	78-102	99.0	O	....	....	....	....

TABLE 2.—SUMMARY

Class.	Extent of Physical Signs According to Turban.	T. B. Found at Any Time.	Hygienic-dietetic Treatment Without Tuberculin. Patients Who Stayed Over 90 days. Average Residence, 209 Days. Cases. No.	Cases. %	Appar. Cured. No.	Appar. Cured. %	Arrested. No.	Arrested. %	Improved. No.	Improved. %	Progressive. No.	Progressive. %	Died.
Incipient........	I	O	15	20	10	67	4	27	1	7	....	....	..
Incipient........	I	+	16	21	3	19	12	75	1	6	....	....	..
Mod. advanced..	I	O	4	5	1	25	2	50	....	....	1	25	..
Mod. advanced..	I	+	7	9	....	....	7	100	....	....	....	....	..
Mod. advanced..	II	O	5	7	2	40	2	40	1	20	....	....	..
Mod. advanced..	II	+	22	29	....	....	13	59	5	23	4	18	..
Mod. advanced..	III	O	2	2	....	....	2	100	....	....	....	....	..
Mod. advanced..	III	+	5	7	....	....	5	100	....	....	....	....	..
Far advanced....	III	+	....	....	....	....	....	....	....	....	....	....	..

Class.	Extent of Physical Signs According to Turban.	T. B. Found at Any Time.	Hygienic-dietetic Treatment With Tuberculin. Patients Who Took Tuberculin More Than 90 Days. Average Residence 250 Days. Cases. No.	Cases. %	Appar. Cured. No.	Appar. Cured. %	Arrested. No.	Arrested. %	Improved. No.	Improved. %	Progressive. No.	Progressive. %	Died.
Incipient........	I	O	9	15	5	56	1	11	3	33	....	....	..
Incipient........	I	+	14	24	4	29	8	57	1	7	1	7	..
Mod. advanced..	I	O	2	3	....	....	2	100	....	....	....	....	..
Mod. advanced..	I	+	7	12	....	....	6	86	1	14	....	....	..
Mod. advanced..	II	O	1	2	....	....	1	.00	....	....	....	....	..
Mod. advanced..	II	+	15	25	....	....	11	73	3	20	1	7	..
Mod. advanced..	III	O	1	2	....	....	1	100	....	....	....	....	..
Mod. advanced..	III	+	9	15	....	....	4	41	3	33	2	22	..
Far advanced....	III	+	1	2	....	....	....	....	1	100	....	....	..

TERMS USED IN DEFINITION OF "CURED"

18. *Ordinary Condition of Life.*—This term as used implies that the patient is able to live in an environment where he is able to support himself without the assitance of others, or to live in his former surroundings and pursue his former occupation.

2. The Method of Physical Examination

Any classification must necessarily depend in part on physical signs, and, as long as different examiners follow different methods of examination the extent of the physical signs will vary and the usefulness of any classification, intended for comparison, will be greatly limited. To overcome this difficulty the committee suggests that the patient should be stripped to the waist and that râles should be said to be absent only when they are absent after the patient exhales, coughs at the end of exhalation and then takes a full, deep, fairly quick breath through his mouth. A stethoscope must be used for this examination.

3. Statistical Reports of Sanatoriums

The committee feels that much might be done to improve the statistical reports of American sanatoriums and would urge those institutions that have not done so to publish certain details about each patient on admission and on discharge. Turban of Davos has devised a scheme for this purpose which the committee has modified somewhat. Every sanatorium is urged to use this scheme for reporting its individual cases. The modified scheme is given in Table 1.

The extent of the physical signs in each lung has been noted as well as the presence or absence of tubercle bacilli before admission and during residence. The committee believes that the presence or absence of signs of cavity formation should be noted in the scheme. This datum can easily be indicated by a small (lower case) c after the letter R or L in the second column under "Extent of Physical Signs," e. g., "Rc.^{3}" This would not necessitate another column.

The summary of the results of this tabulation in the reports of many sanatoriums are far from satisfactory, and your committee would suggest that the form of summary given in Table 2 be adopted:

This summary divides all patients into the three classes advised by the National Association for the Study and Prevention of Tuberculosis, and, further, each of these is divided into the different classes according to the extent of phyical signs. Turban's classification has been used for this purpose, and attention is called to the fact that the three original classes, incipient, moderately advanced and far advanced, have nothing in common with Turban's classification which deals only with the extent of physical signs. Finally, each of these stages is divided into two classes, according to whether the lesion has ever been open (tubercle bacilli present at any time) or has always been closed.

This summary, it is believed, will remove several criticisms of the classification adopted by the National Association. Both "moderately advanced" and "far advanced" classes are too broad, it is urged, and rightly, and as much difference, if not more, exists within these groups than between them or between the "moderately advanced" and "incipient" classes. This summary divides the "moderately advanced" group into six divisions, all of which should be reported on separately. It also divides the "far advanced" group into two or more divisions.

The results of the sputum examinations recorded in most reports is also far from satisfactory and the scheme given in Table 3 is suggested. When tuberculin has not been used it is, of course, unnecessary to divide the cases into those who have and those who have not received tuberculin.

TABLE 3.—RESULTS OF SPUTUM EXAMINATIONS OF ABOVE PATIENTS.

Class.	Extent of Physical Signs According to Turban.	Treatment.	A R D + + +		A R D + + O		A R D + O O		A R D O + +		A R D O O +		A R D O + O		A R D O O O		P A R D + O O O	
			No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Incipient..	I	Without Tu..	......	......	4	13	4	13	......	....	......	....	3	10	15	48	5	16
Incipient..	I	With Tu......	5	22	4	17	1	4	......	....	......	....	1	4	9	39	3	13
Moderately advanced.	I	Without Tu..	1	9	4	36	1	9	......	....	......	....	......	....	4	36	1	9
Moderately advanced.	I	With Tu......	4	41	3	33	......	......	......	....	......	....	......	....	2	22		
Moderately advanced.	II	Without Tu..	6	22	6	22	3	11	3	11	......	....	1	4	6	22	2	7
Moderately advanced.	II	With Tu......	6	37	4	25	3	19	......	....	1	6	1	6	1	6		
Moderately advanced.	III	Without Tu..	1	14	3	43	2	29	......	....	......	....	......	....	1	14		
Moderately advanced.	III	With Tu......	6	60	1	10	......	......	......	....	......	....	......	....	1	10	2	20
Far advanced.........	III	With Tu......	1	100	......	......	......	......										

Note.—O=Tubercle bacilli absent. + =Present. A=Admission. R=During residence. D=On discharge. P=Previous to admission.
When T. B. were present on admission, no note is made with regard to previous examinations.
When T. B. were present previous to admission and also at any time during residence, they are marked as present on admission.

It has been suggested by the International Conference at Vienna that the Turban classification of the extent of physical signs should be so modified as to include in the third group all cases with physical signs greater in extent than one lobe. The objection to this classification, known as the Turban-Gerhardt, is the unevenness of the distribution, and, while it divides the first group, which really needs division, the adoption of the summary, discussed elsewhere in this report, divides that group in a very satisfactory manner and the enlargement of the third group makes the Turban-Gerhardt classification of less value.

Mooted Points

The "temperature" is still a vexed question and the committee all hold individual opinions which vary greatly. These recommendations do not meet the entire approval of any member. The temperature should be taken by mouth with a reliable thermometer. Thermometers bought in quantity from any firm should be guaranteed by the firm and a certain number tested by the Bureau of Estimates in Washington as a control.

The thermometer should be left in the mouth, which has been kept closed for at least five minutes, for five to ten minutes to detect the slighter rises of temperature. When the rectal temperature has been taken this fact should be noted.

Two members believe that the temperature should be taken immediately after meals, because, they assert, (1) a rise to 99 to 100 may occur only at this time, and (2) the mouth temperature rises for one hour when the patient comes indoors during cold weather. One insists on a two-hour record. Two members of the committee oppose this time and would suggest either before meals or on awaking, at 4 and 8 p. m., believing that the temperature of the mouth in normal individuals may be affected after eating (as that of the rectum after horseback riding, which has risen to 101 in a healthy person), and further, that heat or cold, which affect the temperature of the mouth through the cheeks, may also raise it much more readily when taken in the mouth in the form of hot drinks or cold or iced foods.

The "normal" temperature is still a mooted point, but far more is known in regard to the oral than in regard to the rectal temperature. The range for each patient varies somewhat, but it is unwise to consider any patient "arrested" or "apparently cured" when the temperature for three or more days averages over 99 F. Absorption from an old focus may cause rise of temperature when the disease is quiescent, but no one can separate such a condition from a slow advance of the disease, imperceptible by our present methods of examination. A rise for a single day to 99.5 F. or even higher when some definite factor (coryza, tonsillitis, etc.) is unquestionably the cause, should be disregarded in making up the average on discharge. It would undoubtedly be wise to insist on a two-hourly temperature record, were this possible, but in any case the temperature should be taken whenever possible after rest (that is, complete relaxation, mental and physical, in a sitting or reclining posture) for at least one hour. Quiet reading or conversation need not be forbidden some patients.

Classification

With these definitions and modifications the committee would suggest that the following classifications be used on admission, on discharge, and for ultimate records:

1. ON ADMISSION

These definitions indicate the furthest extent of disease and the greatest severity of symptoms that a patient can present and still belong to the stage defined. All patients beyond the incipient stage fall under the moderately advanced stage unless the physical signs and symptoms exceed those of the moderately advanced stage, when they should be classified as far advanced.

Incipient.—Slight or no constitutional symptoms (including particularly gastric or intestinal disturbance or rapid loss of weight). Slight or no elevation of temperature or acceleration of pulse at any time during the twenty-four hours.
Expectoration usually small in amount or absent. Tubercle bacilli may be present or absent.
Slight infiltration limited to the apex of one or both lungs or a small part of one lobe.
No tuberculous complications.

Moderately Advanced.—No marked impairment of function, either local or constitutional.
Localized consolidation moderate in extent with little or no evidence of cavity formation; or infiltration more extensive than under incipient.
No serious complications.

Far Advanced.—Marked impairment of function, local and constitutional.
Marked consolidation of an entire lobe.
Or disseminated areas of beginning cavity formation.
Or serious complications.

Miliary Tuberculosis.

2. ON DISCHARGE

Apparently Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of three months; the physical signs to be those of a healed lesion.

Arrested.—Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least two months.[2]

Improved.—Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Unimproved or Progressive.—All essential symptoms and signs unabated or increased.

Died.

3. ULTIMATE RESULTS

Cured.—All constitutional symptoms and expectoration with bacilli absent for a period of two years under ordinary conditions of life.

Well.—Patients who fulfil all the conditions required under "cured" but about whose sputum no definite information can be obtained.

Arrested.—See above.

Improved.—See above.

Progressive.—See above.

Dead.

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[2] The length of time mentioned is, of course, somewhat arbitrary, but is intended to cover the cases which frequently occur, where the patients leave a sanatorium for various reasons, contrary to advice, after a stay of a few weeks, although all active symptoms may have ceased completely soon after entrance.

Medicolegal

Newspaper Articles Concerning Professional Conduct of Physicians Not Privileged

The Supreme Court of South Dakota considers, in the libel case of Rood vs. Dutcher, the question of whether newspaper articles concerning the professional conduct of a practicing physician should be regarded as privileged communications merely because of the relation of the physician as such to the general public in the territory to which his practice extends.

So far as applicable to this question a privileged communication is defined by the civil code of South Dakota, the court says, to be one "made, without malice, to a person interested therein, by one who is also interested, or by one who stands in such relation to the person interested as to afford a reasonable ground for supposing the motive for the communication innocent." This court has held that this definition embraces newspaper articles relating to the official conduct of public officers and candidates for public office. Does it also embrace newspaper articles relating to the professional conduct of physicians? The court thinks not.

The relation of a public officer to the public is substantially different from that of the physician. All are or may be affected by the official conduct of the former, and therefore are interested in any communication in relation thereto, while only such persons as desire to employ the latter are interested in communications relating to his professional conduct. Hence neither the proprietor of a newspaper nor any other person owes any duty to give information concerning the same unless requested to do so by some one desiring to employ the physician. Indeed, no reason exists for extending the presumption of innocent motive to false statements regarding a physician which would not apply with equal force to a minister of the gospel, an attorney at law, a banker, merchant, or other person whose vocation involves voluntary transactions with people generally in the community in which such person resides.

Admissibility of Evidence as to Character of Prior Childbirths and Pains

The Supreme Court of Iowa says that in the personal injury case of Etzkorn vs. City of Oelwein the plaintiff claimed that while passing over a defective sidewalk she was tripped by the loose boards, thrown forward and down on the walk, displacing an unborn child which she was then carrying from its natural position, causing delayed, prolonged and more difficult labor and greatly injuring and impairing her health. It appeared that she had been delivered of four other children prior to the time the one in question was born. She was asked as to how these other children were born, whether in a normal or abnormal position; and as to whether or not she suffered any pains or inconvenience from the birth of her other children. To the first question she responded that they were born in a normal position, and to the second that she had not suffered pains. The court is constrained to hold that these questions were improper, and the answers decidedly prejudicial.

The court knows of no authority which holds that because a woman is delivered of one or more children in a normal position that others are likely to and will be born in the same position. It was shown in the record in this case, and it is well known, that unborn children assume various positions while in the mother's womb, changing their position from time to time, and that whenever there is no movement there is danger not only to the child but to the mother. The plaintiff claimed that by reason of her fall her unborn child was forced in a transverse and unnatural position, where it remained until birth, when it had to be changed by means of instruments and manipulations into a proper position for delivery. In order to demonstrate this, she was permitted to testify that her other children were born in a normal position. There was no logical connection between these facts.

Moreover, the plaintiff's testimony that she suffered no pain when her prior children were born might be true, although contrary to all human experience; but, even if true, it had no tendency to show that the pain she suffered from the delivery of her last child was due to the injury she received when she fell on the sidewalk.

The only legitimate inference to be derived from the plaintiff's testimony as to prior childbirths was that these deliveries did not rupture any of her organs, and that she had not suffered any lesions which were found after the birth of her last child. Direct testimony was admissible on this point.

The effort undoubtedly was to have the jury believe that, as she had not previously suffered from childbirth, her suffering which she had described as accompanying the birth of her last child must have been due to the accident on the walk. For reasons already suggested, the court does not think this true, either as a logical or gynecologic proposition.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

New York Medical Journal

September 11

1 [illegible] Joint. C. Ogilvy, New York.
2 * [illegible] Levy, Denver.
3 [illegible] W. M. Beach, Pittsburg, Pa.
4 [illegible] Law of Thermodynamics. F. H. [illegible] C.
5 [illegible] Presence of Gangrene. I. S. Wile, [illegible]
6 *Fracture of the Neck of the Femur in a Multipara. S. A. Savitz, Philadelphia.
7 *Do the Saprophytes Produce Toxins which have Elective Attraction for the Brain and Nerve Tissue and thus Cause the Idiopathic Diseases of These Structures? B. R. Le Roy, Athens, Ohio.
8 Is Tuberculosis Decreasing in Cities of Between 300,000 and 500,000 Inhabitants? L. Irwell, Buffalo.

2. Laryngeal Tuberculosis.—Levy summarizes his paper as follows:

1. Pathologic conditions of the laryngeal mucosa, especially chronic catarrhal laryngitis, are important factors in the etiology of tuberculosis of the larynx.
2. Pain is not always present in laryngeal tuberculosis. When present it is not always conclusive that the lesion is tuberculous. It may exist without ulceration.
3. The beneficial effect of mercurial treatment in laryngeal lesions of tuberculous patients should not be accepted as positive proof of the value of this treatment in tuberculosis. It must be recognized that the differential diagnosis between syphilis and tuberculosis of the larynx is at times extremely difficult especially when the former exists in tuberculous patients.
4. Bacteriologic confirmation of the diagnosis is often obtainable by examination of smears made directly from the laryngeal lesion.
5. It is necessary to again impress on the general profession the curability of laryngeal tuberculosis. It is especially important that the prognosis be determined by a careful study of the lesion in all its characteristics.
6. Local treatment to be effective must be well selected both as to time of applications and method of procedure.

6. Fracture of Femur During Labor.—The third day after delivery the patient experienced a transferred pain in the right hip joint radiating to the knee, which was very excruciating on the slightest disturbance of the limb, thus rendering change of posture impossible with the single exception of extension of the limb, which lessened the pain to a considerable extent. As a result of her suffering, the attending physician, together with others, treated her internally for some nervous affection, but her pain still persisted. About two months after delivery Savitz saw the patient and made a diagnosis of impacted fracture of the neck of the femur, which was confirmed by operation. Savitz emphasizes particularly that this fracture must have been caused at the time of delivery by the unforeseen negligence of the attending physician by causing a slight twist of the thigh, or endeavoring to manipulate the instruments, flexed the leg more than the normal capacity could endure, and, as a result, fracture of the neck of the femur followed. In addition thereto, it is plausible to believe that it may have been caused after delivery, but the patient positively states that she was not out of bed, but rather rested herself, and knowing there would be exaggerated pain on the slightest movement, it is fair to assume that she remained in bed, and, consequently, there was no disturbance to cause any such fracture. On the other hand, it would be ridiculous to conclude that the fractured neck of the femur was caused by a previous disease of the hip joint when the pain was experienced but two days after labor.

7. Saprophytes and Nerve Tissue.—Le Roy holds that to the absorbed toxins and endotoxins, generated by the so-called spore-bearing saprophytes of the human body are due the varying degrees of mental and nerve disorders, from simple absent-mindedness to asymbolia, from the simple nervousness to the most intractable disease of the brain or nerves, heredity, like traumatism, only playing the part of a weakening agent, at which time the toxins produced by the spore-bearing saprophytes get in their work. Le Roy claims to have positive knowledge that these saprophytes produce toxins and endotoxins, which, when injected into the living animal, produce varying degrees of paralysis; and, also that the action is slow and insidious under ordinary circumstances. There is one point on which he is most certain of his position; that is, that these toxins have a selective attraction for the brain and nerve tissue.

Boston Medical and Surgical Journal

September 9

9 *Simple Inspection of the Eyes as an Aid in General Diagnosis. H. B. Stevens, Boston.
10 Importance [illegible] and Ulcers of the Duodenum [illegible] volve the Pylorus or are Abov[illegible]
11 Studies in [illegible] B. Sidis, Brookline, Mass.
12 Sudden Deaths in a Synopsis of Twenty Years' Medicolegal Work. F. H. Canedy, Shelburne Falls, Mass.
13 *The Queen's Closet Opened. G. W. Myers, Boston.
14 Gunshot Wound of the Head. C. W. Bartlett, Marshfield, Mass.

9. Inspection of Eyes in General Diagnosis.—Stevens points out that the eyes from the vantage ground of their wonderfully perfect anatomic and physiologic position are especially adapted to reflect many of the most important changes of the system, and a large majority of those signs may be revealed by simple inspection merely. Moreover, the eyes, more than other organs, are at all times most easily and conveniently inspected, and simple but intelligent inspection may give important information concerning various physical and functional body processes.

13. The Queen's Closet Opened.—Myers gives a brief review of this volume published in 1656, and containing formulas and recipes originally collected for Henrietta Marie, the wife of Charles I of England.

Medical Record, New York

September 11

15 Rôle of Visual Function in Animal and Human Evolution. G. M. Gould, Ithaca, N. Y.
16 Medical Management of Degenerate Children. R. H. Porter, Chicago.
17 *Surgical Treatment of Diarrhea. S. G. Gant, New York.
18 Village Treatment of Nervous Invalids. L. P. Clark, New York.
19 The Liquor Problem: Some Suggestions for its Solution. C. A. Rosenwasser, Newark, N. J.
20 Amount of Lung Involvement at the Onset of Pulmonary Tuberculosis. H. L. Barnes, Wallum Lake, R. I.

17. Surgical Treatment of Diarrhea.—Gant doubts if more than 10 per cent. of the persons suffering from chronic diarrhea are curable by means other than through bowel irrigation, as practised through the anus, or from above through the appendix or cecum. Of those who do not respond to direct treatment of the colon, the cause of the trouble in a number of cases is located in the small intestine, stomach, liver or pancreas. Gant says he has cured many persons suffering from chronic diarrhea without an operation, by the daily irrigation of the bowel with different solutions. The following procedures have been resorted to with more or less success in the treatment of simple and other ulcerative colitis inducing chronic diarrhea: (1) Resection; (2) intestinal exclusion; (3) colostomy; (4) appendicostomy, and (5) Gant's cecostomy with irrigation of the small intestine. The latter procedure is carried out as follows: Through a two-inch muscular incision made directly over the cecum, it and the lowermost part of the ileum are withdrawn and the edges of the wound covered with sterile gauze handkerchiefs. The cecum is scarified and clamped with rubber-covered forceps to prevent soiling of the wound when the bowel is opened. Four linen or silk seromuscular purse-string sutures are inserted in the anterior wall of the cecum at or outside the longitudinal band directly opposite the ileocecal valve, when the bowel is quickly opened inside the suture line by using the knife for the outer coats and the scissors for the mucosa. The bowel is grasped at the juncture of the large and small intestine and held in such a way that the ileocecal valve rests between the thumb and the fingers of the left hand. A Gant catheter guide is then introduced through the incision and carried directly across the cecum, and then suddenly guided through the ileocecal valve into the small intestine by the aid of the thumb and fingers, placed there for this purpose. The guide is then held by an assistant while the obturator is removed and a catheter, No. 12, is introduced into the small bowel. The guide is then removed and the catheter is held by an assistant until it has been anchored to the cecum by a catgut silk suture to prevent its slipping out. A short piece of catheter three inches long is then introduced into the cecum, beside the one which enters the small bowel, for an inch or more, when both catheters are fastened together by a narrow band of adhesive plaster placed around them, on a level with the skin. The clamp is now removed from the cecum and the purse-string sutures are tied; this inverts the edges of the bowel about the tubes, each stitch in its turn causing a still further circular infolding of the bowel, all together forming a cone-shaped valvular projection all around the catheters which effectually prevents the escape of the feces. The cecum is scarified and anchored to the abdominal wall by through-and-through suspension suture or by chromicized catgut stitches which include the peritoneum and fascia. The wound in the abdomen is closed by the layer method, after which the catheters are stitched to the skin or preferably retained in place by a narrow strip of adhesive plaster between them and attached to the skin. Ordinary five-cent cravat clamps are snapped over the ends of the catheters to prevent leakage, after which the operation is completed, applying the ordinary dry dressings, which are held in place by adhesive strips.

Lancet-Clinic, Cincinnati

September 4

21 Ectopic Pregnancy. A. Haarlammert, Loveland, Ohio.
22 Certain Antagonism for Opium Narcosis. T. H. Williams, Germantown, Tenn.
23 Advancement of Paralyzed Muscle for Cosmetic Purpose. V. Ray, Cincinnati.

Virginia Medical Semi-Monthly, Richmond

August 27

24 Should Virginia Impose a License Tax on Physicians? G. A. Stover, South Boston.
25 *Treatment of Acute Diarrhea in Infancy. J. B. Nowlin, Richmond.
26 Uncinariasis. J. R. Perkins, Spencer.
27 Musings of a Medical Man. R. H. Garthwright, Vinton.
28 Relation of the Pharmacist to the Practise of Medicine. W. C. Marshall, Staunton.

25. **Acute Diarrhea in Infants.**—In cases of diarrhea due to fermentation, Nowlin uses mercury bichlorid in a solution of one grain to four ounces of water, giving ten to fifteen drops every four hours until the stools become yellow in color and remain so. This is usually the case in from twenty-four to forty-eight hours. Then the dose is decreased, the aim being to give just enough mercury to keep the stools in this state. Food is withheld for the first twenty-four hours, at the beginning of which the usual purge of castor oil is given. At the expiration of this time, the usual food is resumed, but the mercury is kept up for a week or more. Irrigation is done in some cases, but Nowlin thinks that in this form of diarrhea, irrigation is generally overdone.

Southern California Practitioner, Los Angeles

August

29 *Surgery in Infancy. S. Stillman, San Francisco.
30 Pelvic Infection Following Labor. F. M. Bruner, Santa Ana.
31 *Diet Regulation for Dyspeptics. W. P. Millspaugh, Los Angeles.
32 *The Physician's Duty to the Public. J. W. Foss, Phoenix, Ariz.
33 Medical Treatment of Disease of the Biliary Tract. E. W. Hanlon, Los Angeles.
34 *Straw Mattress Urticaria. J. Goldberger, U. S. P. H. and M.-H. Service, and J. F. Schamberg, Philadelphia.
35 Gastric and Duodenal Ulcer. E. J. Claypole, Pasadena.

29 and 32. Abstracted in The Journal, July 17, 1909, p. 228.

31. **Diet Regulation.**—Millspaugh makes a very good point by saying that the regulation of diet for dyspeptics is not a simple thing. It will not do to tear off a printed diet-list for "ulcer" or "gastritis," or "hyperchlorhydria," and hand it to the patient. We must feed the whole patient, not his stomach or his liver or his intestines alone. To do it intelligently we must know the patient from head to foot, inside and outside; and we must know what the different foods will do.

34. Abstracted in The Journal, Aug. 14, 1909, p. 573.

Annals of Otology, Rhinology and Laryngology, St. Louis

June

36 Treatment of Cancer of the Larynx. O. Chiari, Vienna.
37 Study of the Anatomic Relations of the Optic Nerve to the Accessory Cavities of the Nose. H. W. Loeb, St. Louis.
38 Diseases of the Eye and Orbit Secondary to Pathologic Changes in the Nose and Accessory Sinuses. C. R. Holmes, Cincinnati.
39 Orbital Complications of Disease of the Frontal Sinus. H. F. Hansell, Philadelphia.
40 Ocular Symptoms of Diseases of the Nasal Sinuses. W. C. Posey, Philadelphia.
41 Extralaryngeal Causes of Laryngeal Symptoms. F. Smithies, Ann Arbor.
42 Clinical and Microscopic Diagnosis of Tuberculosis of Tonsils. L. M. Hurd, and J. Wright, New York.
43 Diagnosis and Surgical Treatment of Abscess of the Temporosphenoidal Lobe. W. S. Bryant, New York.
44 Removal of Tonsil (complete) in its Capsule. F. C. Todd,
45 for Inflating the Tube and Tympanum. Ohio.
46 Methods of Opening the Maxillary Antrum, with Presentation of New Instrument. J. O. Roe, Rochester, Minn.
47 Probable Case of Sarcoma of the Sphenoid Sinus. D. Roy, Atlanta, Ga.

Old Dominion Journal of Medicine and Surgery, Richmond

August

48 The Dead Body. W. H. Taylor, Richmond.
49 Extraperitoneal Implantation of the Ureters into the Rectum in Exstrophy of the Bladder. S. McGuire, Richmond.
50 nges in Lithemia. M. Call, Richmond.
51 * Bodies: An Unusual Case. D. D.
52 * F. P. Dunnington, Charlottesville.

51. **Localization of Foreign Bodies.**—Talley reports a case of needle in the buttock in which previous attempts at extraction were unsuccessful. The needle was localized by the *x*-ray, and was found to be imbedded in the sciatic nerve. It was removed by operation.

52. **Tincture of White Soap.**—The formula proposed by Dunnington for this preparation is as follows:

℞.	gm. or c.c. For 1 gallon.
White Castile soap (Conti's)	1,200
Ammonia stronger	100
Alcohol	1,400
Water, dist.	1,300

The specific gravity of this mixture is 0.97, which is identical with that of tincture of green soap. To make one gallon: Mix the liquids for it in a *one-gallon* jar and then add the soap, previously cut into coarse shavings. Crowd all the soap into the jar and cover it with a glass plate. After 12 hours stir, and again stir after some hours. Allow to settle 12 hours and then filter, decant or syphon off the clear liquid into a can which may be kept closed. There will remain a few ounces retaining the impurities of the soap, which may be used for less particular washing. If this liquid is exposed to evaporation for a few hours, ammonia and alcohol escape, and a mass of the consistency of green soap will be obtained. While this preparation is said to be free from the objections to tincture of green soap, it presents the additional advantage of costing but $1.50 a gallon, and, if the alcohol is obtained tax free, the cost will be about 60 cents a gallon, while tincture of green soap will cost $1 or more.

Wisconsin Medical Journal, Milwaukee

August

53 *Operations on Handicapped Patients. G. W. Crile, Cleveland, Ohio.
54 The State University, the Medical Profession, and the Public. C. R. Bardeen, Madison.
55 Treatment of Tuberculosis in Those who have to Work Indoors. T. Willett, West Allis.
56 Relation of Ocular Defects to Diseases of the Nose and Accessory Sinuses. J. M. Cooke, Darlington.
57 Toxicity of Human Sweat. C. A. Baer, Milwaukee.

53. Abstracted in The Journal, Aug. 21, 1909, p. 647.

Chicago Medical Recorder

August

58 Contemporary Workmen's Compensation. W. H. Allport, Chicago.
59 *Dietary Control of Gastrointestinal Disorders. R. W. Webster, Chicago.
60 *Purpura urotoxic Form Due to a Syphilitic us a Toxic Action from Potassium , Chicago.

59. **Gastrointestinal Disorders.**—Webster tries to show that the dietary treatment of gastrointestinal diseases must be based on a definite knowledge of the normal gastroenteric functions rather than on the many empiric regulations which have been laid down in times when our knowledge was not so exact regarding the influences of the various ferments on the different types of food or of the interrelations of the activities of the stomach and bowels. Observing the perversions of function, which may not always be outlined clearly, is the only certain method which can lead to a scientific dietary control. More careful study of the patient, instead of the too frequent reliance on empiricism, will reward the practitioner with the gratitude of his patient, and the patient will have a much higher opinion of the physician, as well as a more nearly normal gastrointestinal tract.

60. **Purpura Hemorrhagica.**—Bernart's case of purpura hemorrhagica was a neurotoxic form due to a syphilitic nerve involvement, plus a toxic action from potassium iodid. The hemorrhagic spots were only and entirely confined to a portion of the body affected by a syphilitic process within the spinal canal; the long axis of the oblong lesions all ran horizontally. An examination of the scrotum showed a hemorrhagic infiltration into the skin of the scrotum, both thighs and legs. The upward extension of the eruption was definitely limited to a surface line drawn from trochanter to trochanter; a few scattered lesions on the posterior and lateral aspects of the buttocks extended above the line. Below, the eruption was definitely marked as far as the lower edges of the calves of the legs; below this it became scattered and disappeared at the ankles. Most of the spots were oblong in shape, the largest being about 1¼ by ¾, and all assumed a horizontal position. None of the spots showed a deep ecchymosis, but were of a mottled appearance due to an imperfect infiltration into the skin.

There being but little doubt that the spots were due to one of the drugs given, it was decided to discontinue the iodid to ascertain which produced the lesions. After the lapse of a week the spots disappeared, a slight mottling of the surface alone being visible. Twelve days after the beginning of the treatment, the patient was again placed on the potassium iodid. During this second course he was given larger doses, 2 grams, three times daily. Four days after readministering the iodid the eruption again occurred and was confined to the same regions as before and the long axis of the spots also ran transversely.

A third course of the iodid was started on the twenty-first day; this was followed in a few days by a recurrence of the purpura showing the same characteristics as its predecessors, with the exception that the spots were not so numerous or so clearly defined. Before the inauguration of this third course the patient showed a decided improvement in his general condition. Thirty-one days after the beginning of the treatment the fourth course of the iodid was given; this was followed by a few ill-defined spots confined to the thighs and buttocks. A few weeks later a fifth course was tried, but it failed to produce any lesions. The real interest in this case is that the iodid alone did not produce the purpura, neither did the lesions within the spinal canal; the phenomena occurred through the combined action of the two, namely, through the toxic action of the iodid on an area influenced by some syphilitic nerve involvement which undoubtedly was situated in the spinal canal between the first and fourth lumbar vetebræ and involved in the ilioinguinal, genitocrural, external cutaneous, obturator and anterior crural nerves. The peculiar arrangement of the spots remains unaccounted for.

Alabama Medical Journal, Birmingham

August

61 Gastric and Duodenal Ulcer Treated Surgically. J. M. Mason, Birmingham.
62 Appendicitis, with Pus and Peritonitis. W. T. Berry, Birmingham.
63 Surgical Treatment of Prostatic Abscess and Hypertrophy. G. Torrance, Birmingham.
64 Early Recognition of Pneumonia and the Differentiation from Abdominal Conditions. T. C. *Donald*, Bessemer.
65 An Interesting Case. H. L. Appleton, Birmingham.
66 Pellagra—Honor to whom Honor is Due. C. M. Rudolph, Birmingham.

Albany Medical Annals

September

67 Hypodermatic Medication in Modern Therapy. S. L. Dawes, Albany, N. Y.
68 Acute Diffuse Suppurative Peritonitis. J. E. Sadlier, Poughkeepsie, N. Y.
69 Personal Experience with Gastroenterostomy. E. A. Vander Veer, Albany, N. Y.
70 Spinal Anesthesia. F. E. Lettice, Ossining, N. Y.
71 Tuberculosis of the Breast. F. J. Resseguie, Saratoga Springs, N. Y.

Journal South Carolina Medical Association

August

72 *The Occidental-Oriental Health Problem. L. Cofer, U. S. P. H. and M.-H. Service.
73 Etiology, Prevention and Treatment of the More Common Tropical Diseases Encountered in the Canal Zone. J. A. Hayne, U. S. Army.
74 Local and Constitutional Treatment of Corneal Ulceration. C. W. Kollock, Charleston.
75 Preventable Blindness. E. F. Parker, Charleston.
76 Musca Domestica: The Common House Fly. F. A. Coward, Columbia.
77 *Prevalence of Pellagra in the United States. C. H. Lavinder, U. S. P. H. and M.-H. Service.
78 *Etiology of Pellagra. C. H. Lavinder, U. S. P. H. and M.-H. Service.

72. Abstracted in The Journal, June 5, 1909, pp. 1870, 1971.

77. **Pellagra in the United States.**—This is a statistical and geographic note, with an excellent American bibliography appended.

78. **Etiology of Pellagra.**—Lavinder holds that the cause of pellagra is essentially unknown; that the idea in one form or another, of an etiologic relation between pellagra and the use of maize as a food is held by the majority of students of the disease; that such an idea is almost as old as the history of the disease itself; that it rests to some extent on the observations and experimental work of many able men; and that it seems unwise to hold to such views so dogmatically as to exclude investigation along other suggestive lines.

Southern Medical Journal, Nashville

August

79 Laboratory Methods in Diagnosis of Typhoid. E. G. Wood, Nashville.
80 [illegible] d. W. Litterer, Nashville.
81 [illegible] n Typhoid. S. Harris, Mobile, Ala.
82 [illegible] J. G. Cecil, Louisville.
83 [illegible] of Typhoid. W. D. Haggard, Nashville.
84 *Metastases in Carcinoma of the Breast. C. A. Robertson, Nashville.
85 *Teaching of Pharmacology in the Smaller Medical School. W. deB. MacNider, Chapel Hill, N. C.
86 Di[illegible] nent of Occupation and Other Psychic Origin. T. A. Will- [illegible]
87 Lu[illegible] Measure. T. J. Coble, Shelbyville, Tenn.
88 *Treatment of Tetanus with Special Reference to the Use of Magnesium Sulphate. G. J. Winthrop, Mobile, Ala.

84. **Metastases in Carcinoma of the Breast.**—In June, 1908, Robertson amputated the right breast for adenosarcoma. Perfect coaptation of the wound was secured, and *in ten days* union was complete throughout. The patient made an uneventful recovery, but continued to suffer with difficult locomotion, muscular pains and soreness, which were supposed to be due to rheumatism. Nov. 26, 1908, while endeavoring to get out of bed, she sustained a fracture of the humerus at its middle, occasioned by the slightest muscular effort. Under appropriate treatment perfect union resulted. This patient came under observation again April 3, 1909, having been confined to her bed for about two months. She was now unable to move her body *in any* direction, there was marked kyphosis and evidence of mediastinal involvement. There was no paralysis of the lower extremities, nor interference with the bladder function. The patellar reflex was somewhat exaggerated. Fracture of the humerus occurred spontaneously, without traumatism.

85. **Teaching Pharmacology in Smaller Medical Schools.**—Macnider emphasizes that a laboratory course in pharmacology for 40 hours, which includes the use by the students of frogs, turtles and higher animals, can be given anywhere with an expenditure of not over $60 a year, provided the physiologic apparatus is used. The initial expenditure for other necessary apparatus and the construction of a simple dog house, need not be over $100. The value of such a laboratory course, simple as it is, is difficult to estimate. Short conferences with each group of men concerning experiments and results obtained gives the instructor a chance to study each individual

in the group and to aid in the development of the weaker members. The operative work gives the men an insight into operative technic. Lastly, it trains them to observe closely, to make accurate records, to seek for the reason, for results, and creates in them an enthusiasm for investigation and scientific medicine which must do much to direct them in their future work.

88. **Treatment of Tetanus.**—Winthrop reports a case of tetanus treated successfully by the injection of magnesium sulphate into the spinal canal.

Archives of Pediatrics, New York

August

89 *Urine in the Gastrointestinal Diseases of Infancy. J. L. Morse and B. Crothers, Boston.
90 The New-Born. H. E. Tuley, Louisville.
91 Treatment of Diphtheria, with Special Reference to the Prevention of Heart Failure. L. Porter, San Francisco.
92 Pathology of Thymic Hyperplasia and the Status Lymphaticus. A. S. Warthin, Ann Arbor, Mich.

89. **Urine in Gastrointestinal Diseases.**—The conclusions drawn by Morse and Crothers from a study of the urine in 300 cases are as follows: Albuminuria is found in from 8 to 10 per cent. of babies ill with various diseases of the gastroenteric tract. It is found somewhat more often in acute than in chronic diseases. Judging from the examination of the sediment, the pathologic condition in the kidneys almost never progresses beyond that of acute degenerative nephritis (often known as cloudy swelling or active hyperemia). Infection of the urinary tract, resulting in the symptom-complex commonly known as pyelitis or pyelonephritis, is far more common than acute parenchymatous or interstitial nephritis. In the chronic diseases there is no relation between the albuminuria and the mortality or symptomatology. The mortality is higher in the acute diseases when albuminuria is present than when it is not. The presence of albuminuria in an individual case does not, however, materially modify the prognosis in that case. Edema occurring in the course of diseases of the gastroenteric tract is not connected with the condition of the kidneys. There is nothing to suggest any causative relation between the affection of the kidneys and such symptoms as restlessness, convulsions and stupor. These are due to toxemia and not to uremia.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

August

93 Some Convenient Laboratory Apparatus. A. C. Crawford and H. V. Honn, Washington.
94 *Effects of Caffein and Sodium Bicarbonate on Toxicity of Acetanilid. W. Hale, U. S. P. H. and M.-H. Service.
95 Anesthesia by Intracerebral Injection of Magnesium Chlorid. V. E. Henderson, Toronto, Can.
96 *Ergot. W. H. Cronyn, and V. E. Henderson, Toronto, Can.
97 Pharmacologic Action of Some Phthaleins and their Derivatives, with Special Reference to their Behavior as Purgatives. J. J. Abel, and L. G. Rowntree, Baltimore.
98 Clavin, Vahlen's Active Constituent of Ergot. D. D. Vanslyke, New York.
99 Effect of Collodion on the Amanita Hemolysin. W. W. Ford, Baltimore.
100 Distribution of Poisons in the Amanitas. W. W. Ford, Baltimore.
101 Pharmacologic Action of Iodbenzoate, Iodosobenzoate and Oxyiodosobenzoic Acids. A. S. Loevenhart, and W. E. Grove, Madison, Wis.

94. **Toxicity of Acetanilid.**—Hale found by experimentation on the hearts of both warm and cold-blooded animals that caffein is of little or no benefit in acetanilid poisoning in so far as the energy is concerned, and in some cases apparently exerts a harmful effect. The same is also true in the case of blood-pressure. On the other hand, there appears, especially in the dog, to be a well-established antagonism on the heart rate. This antagonism, however, would probably be insufficient to be of any value in cases of poisoning in man. Feeding experiments demonstrated the absence of antagonism between acetanilid and caffein, in all cases the addition of the latter drug causing death more quickly or with a smaller dose. This, in connection with the imperfect antagonism to the heart action, makes the use of caffein in acetanilid mixtures especially questionable. Sodium bicarbonate, in contrast, lessens the toxicity of acetanilid, both in its action on the heart and on the intact animal, increasing the duration of life or making the use of a larger dose of acetanilid necessary to cause death.

96. **Ergot.**—The results obtained from experiments lead the authors to advise the use of ergot in certain emergencies, namely, in shock and postpartum hemorrhage. In both these cases Cronyn and Henderson would use the drug intravenously; but the effect should be watched carefully and care taken not to repeat the dose too frequently. They conclude also that: 1. Most galenical preparations of ergot contain a considerable amount of the active principles, but do not show any great or marked action when given by mouth. The usually recommended doses are much too small. 2. Ergotoxin is a highly active alkaloid and has the properties of ergot most desired in medicine. 3. Ergotoxin brings about a long-enduring contraction of the walls of arterioles, and increases the movements of the uterus. 4. This action is feeble when ergotoxin is given by mouth, but more marked in subcutaneous injections and much more marked when given intravenously. 5. In cases in which a rapid and certain action is wished, either in shock or in postpartum hemorrhage, they would recommend intravenous administration. They recommend, further, if the effect proved too evanescent to achieve the results desired, that suprarenal extract be administered subsequently in repeated small doses.

Woman's Medical Journal, Cincinnati

August

102 [illegible]berger, Sioux City, Iowa.
103 [illegible]eral Symptomatology. L. H. [illegible]
104 [illegible] A. Safely, Cedar Rapids, Ia.
105 [illegible] Iowa City, Iowa.
106 Home Treatment of the Individual. C. Whitmore, Cedar Rapids, Iowa.
107 Sanatorium Treatment of Tuberculosis. J. B. Hudson, Iowa City, Iowa.
108 Treatment of Tuberculosis along the Line of Social Needs. S. H. Scott, Des Moines, Iowa.

Ophthalmic Record, Chicago

August

109 Case of Migraine Involving the Abducens Nerve. C. A. Veasey, Spokane, Wash.
110 *Should we Operate in High Degrees of Myopia? J. S. Wyler, Cincinnati.

110. **Operation in High-Grade Myopia.**—The following indications alone, according to Wyler, seem to warrant operation: (1) A myopia of at least 14 diopters; this is the minimum, for 18-20 D. give even better results; (2) the degeneration of the fundus must not be very far advanced or the vitreous greatly diseased, for under such circumstances good vision can hardly be expected; (3) if the patient can follow his daily occupation without discomfort, nothing should be done. It is in those cases in which the visual acuity is so diminished because of the decreasing size of the objects, that the interference is justified in order to allow the myope to continue at his trade; (4) patients over 40 years old should not be operated on, unless it is absolutely imperative, for after this age a needling and linear extraction will not meet the requirements, and a simple extraction in a high myope is not only exceedingly difficult, but hazardous. The extraction in capsule, after the method of Major Smith, is hardly applicable, because of the fluid vitreous present and its almost certain loss.

Laryngoscope, St. Louis

August

111 *An Abundant Meatal Flap for the Radical Operation. F. Whiting, New York.
112 The Heath Operation for Chronic Aural Suppuration. E. C. Ellet, Memphis.
113 Removal of a Bullet from the Inner Wall of the Middle Ear. T. V. Moore, Huntington, W. Va.
114 Importance of the Thorough Study of the Nasopharynx in the Treatment of Diseases of the Ear. F. R. Packard, Philadelphia.
115 Clinical Diagnosis and Operative Procedure in Intralaryngeal Carcinoma. C. Jackson, Pittsburg.
116 Microscopic Diagnosis of Intralaryngeal Growths from a Practical Standpoint. J. Wright, New York.
117 Orbital Route to the Accessory Sinuses. P. Fridenberg, New York.
118 Unusual Cases of Frontal Sinusitis. L. M. Hurd, New York.
119 Deep Cervical Abscess from Stricture of the Esophagus: Purpura Hemorrhagica, with Abscess of the Deep Cervical Lymphatics. J. J. Kyle, Indianapolis.

111. **Meatal Flap.**—For radical mastoid work the method of construction of the flap employed by Whiting is as follows: The helix of the auricle is firmly grasped between the thumb and finger and drawn upward, forward and somewhat away from the skull. A sharp-pointed narrow-bladed bistoury is then used

with which to transfix the auricle at the margin of the meatus in the ventricle meridian above, just where the meatus widens out into the concha. When the transfixion is completed, the knife, without being withdrawn from the wound, is made to follow the periphery of the margin of the meatus around its posterior half to the vertical meridian below, in the form of a semicircular or crescent-shaped incision. Caution should be observed when making this incision that the handle of the knife be held as close to the face of the patient as convenience of manipulation will permit, for the more nearly the handle of the knife is kept horizontal with the face, the more deeply will the blade traverse the tissue and the more abundant will be the resulting flap. The tragus should also be protected, lest if it be prominent—as it sometimes is—it may be wounded by the heel of the knife.

Having completed the incision around the posterior border of the meatus, the next step in the construction of the flap is to make a second incision at right angles to the first, extending the entire length of the fibrocartilaginous meatus along the floor. This incision is most easily and accurately completed by cutting from within the meatus outward. The blade of the knife is inserted into the meatus through the incision first made and at its lower angle; thence the cut extends directly downward, dividing the cartilaginous meatus throughout its entire length, and freeing the flap so that it may be drawn upward and backward into position for stitching. Before the flap is stitched in its permanent place, however, it should be divested of all unduly thick and redundant tissue, and of such fragments of cartilage as would in any wise interfere with its pliability and accurate adjustment. Having been thus prepared, the flap is drawn upward and backward, and applied in such a manner as to most advantageously cover the supero-posterior portion of the bone cavity, with the contour to which it naturally adapts itself. A single stitch of catgut carried through its upper margin and attached to the border of the temporal fascia just below the temporal ridge, serves as an efficient support to the flap, while the gauze packing with which the wound is dressed affords the necessary pressure to bring the adhering surface into firm contact with the bony wall which it is designed to cover.

Journal of Indiana State Medical Association, Fort Wayne

August

120 Early Diagnosis and Treatment of Superficial Malignant Growths. J. N. McCoy, Vincennes.
121 Use of the Giant Magnet in Removing Foreign Bodies from the Eye. C. W. Conger, Indianapolis.
122 Pathology of the Seminal Vesicles and Prostate with Suggestions of the Necessity for Surgical Treatment. C. E. Barnett, Fort Wayne.
123 Law and Medicine. C. A. de Bruler, Evansville.
124 Sketches of the Medical History of Indiana (continued). G. W. H. Kemper, Muncie.
125 Lymphatic Enlargement of the Neck. B. F. Kuhn, Elkhart.
126 Exophthalmic Goiter. F. O. Dorsey, Indianapolis.
127 Dermatitis Ditropenotus Aureoviridis. L. Y. Rawles, Huntertown.

American Medicine, New York

August

128 *Dangers of Tent Shelters for Consumptives in Summer. C. E. Woodruff, U. S. Army.
129 Timidity and Insanity (continued). M. K. Isham, Columbus, Ohio.
130 The Holmes Centenary. H. E. Lewis, New York.
131 *A New Kind of Gynecologic Massage and its Indications. R. Hogner, Boston.
132 Expert Chemistry in the Development of Life, and its Bearing on Medical Science. J. Clements, Wichita, Kansas.
133 Gun Deafness: A Danger. G. T. McMaster. New Haven, Conn.
134 The Spleen. E. H. Fiske, Brooklyn.
135 Deficient Excretion of Urinary Solids. W. F. Waugh, Chicago.
136 The Parisian Clinics. T. A. Williams, Washington, D. C.

128. **Tent Shelters for Consumptives.**—Woodruff warns against the use of tents in the hot light months. He says that there is no doubt that the tuberculosis mortality is unduly large, and that it is avoidable if we will only avoid tents and keep the patients cool and shaded.

131. **Gynecologic Massage.**—In the method employed by Hogner the patient is lying about eighteen inches above the floor, on a double incline plane, the head and chest comfortably elevated, the abdomen and the legs very much raised, thus getting the best relaxation of the abdomen and moving the intestines away from the massaging. The operator sits at the patient's left side, on the hard couch, his left hand and forearm in her median line, the elbow resting on the couch. He examines and gives the massage as does Thure Brandt, but uses mostly vibratory massage by means of a motor as introductory to the manual. The vibrations of the machine are transmitted through the abdominal wall and the massaged tissues to the fixating fingers, but pass only a little outside this area, as the vibratory massage is practically local. Hogner gives the massage centripetally, as Brandt did, but begins with the manual and finishes with the vibratory (instrumental). This "new kind of gynecologic massage" (the instrumental, vibratory one) has many times proved curative, he asserts, when other treatments, even surgical, have failed to get permanent, or, for the patient, satisfactory results.

Medical Herald, St. Joseph, Mo.

August

137 *Use of Carbon Dioxid Snow in Dermatology. R. L. Sutton, Kansas City, Mo.
138 Immunity: A Possible Means for its Better Comprehension. J. Block, Kansas City, Mo.
139 A Department of Health, and its Relative Effect on Life Expectancy. L. H. Montgomery, Chicago.
140 Ophthalmologic Experience. B. Pitts, St. Joseph.
141 Some Reasons why I Dispense. G. B. Dorrell, Republic, Mo.

137. Published in *Dublin Journal of the Medical Sciences*, July, 1909.

St. Louis Medical Review

August

142 *Experimental Arteriosclerosis. L. K. Baldauf, St. Louis.
143 The Present-Day Problem of Tuberculosis. O. H. Brown, Mt. Vernon, Mo.
144 [illegible] Elmer, St. Louis.
145 *[illegible]—Its Prevalence and Treatment. [illegible] Pa.

142. **Arteriosclerosis.**—Baldauf reviews the literature on this subject but offers nothing new. He has examined carefully the aortas of a number of large rabbits used at the laboratory of the St. Louis city bacteriologist in the Pasteur treatment for hydrophobia. In none did he find a lesion in the aorta.

145. **Stuttering.**—McCready endorses the so-called melody cure devised by Scripture.

Western Medical Review, Omaha

August

146 Will as a Therapeutic Agent. J. M. Aikin, Omaha.
147 Extra-Gastric Lesions Simulating Gastric Ulcer. A. F. Jonas, Omaha.
148 Acute Anterior Poliomyelitis. F. E. Coulter, Omaha.
149 Helpful Hints to the Busy Practitioner. F. A. Wells, Kenesaw, Neb.

Detroit Medical Journal

August

150 Therapeutic Application of Ovarian Extract. W. H. Morley, Detroit.
151 Value of Reflexes in Diagnosis. J. S. Risien-Russell, London, Eng.
152 Fibroma of Anus and Rectum. S. Stevens, Battle Creek.
153 Extensive Lateral Sinus Thrombosis: Operation Including Ligature of the Internal Jugular Vein: Recovery. E. Amberg, Detroit.

American Journal of Urology, New York

August

154 *New Aphrodisiacs. V. G. Vecki, San Francisco.
155 Hypertrop[illegible] its Treatment. C. Ostermann,
156 *Prostatic [illegible], Cardiff, Wales.
157 Prostate Weighing Seventeen Ounces Removed by the Suprapubic Route. A. Fullerton, Belfast, Ireland.

154. **New Aphrodisiacs.**—Among the aphrodisiacs of old stands first, and most important, cantharides. No real physician would use these preparations, because, as Vecki points out, we know that if cantharides is an aphrodisiac, then acute gonorrhea with an inflammation, causing erections, is also one. Experience teaches that strychnin, phosphorus, quinin and iron have no special action on the sexual desire nor on the erective power, but may act indirectly. Cannabis indica, opium and other narcotics certainly are not aphrodisiacs in the sense of heightening sexual power, but may seem to do so by dulling the inhibitive centers which so often interfere untimely with the desired erections. We do not expect much of an action from damiana, musk or other spices, while alcohol and a rich, especially a prominently nitrogenous diet are like two-edged knives. They do only harm in all those high-livers who endeavor to stimulate the activity of their autointoxicated

organs by stuffing themselves with oysters, caviar, cheese, ale, porter, and many other exhilarating substances. While it is evident that there can be no such drug as an aphrodisiac, industrious fellows have tried to supply the ever-present demand. Innumerable preparations have been thrown on the market. Of some of them we are reminded at regular intervals by most alluring pamphlets and testimonials. One of the newer preparations for which powerful aphrodisiac properties are claimed is yohimbin. Vecki claims that yohimbin has no effect in healthy persons, and showed no effect with any of his impotent patients. In his opinion yohimbin has no value as an aphrodisiac. In fact, he warns against its use. Vecki has also used muiracithin in a number of cases. The patients were none the worse for using muiracithin, but none of them noticed the slightest effect on their sexual powers and feelings.

156. **Prostatic Calculi.**—Thomas reports three cases illustrating the advantages of his method for their successful removal by the combined suprapubic and perineal routes.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

August

158 Cholelithiasis: Gallstone Disease. J. C. Hemmeter, Baltimore.
159 The Therapeutics of Pain. L. F. Flick, Philadelphia.
160 *Present Knowledge of the Action of Cathartic Drugs. F. P. Underhill, New Haven, Conn.
161 *Diabetes Mellitus as an Infectious Disease. A. King, Portland, Maine.
162 *[illegible] in Psychotherapeutics. B. Sidis, Brook- [illegible]
163 [illegible] of the External Auditory Canal. C. J. Blake, Boston.
164 Arthritic Muscular Atrophy. J. V. Shoemaker, Philadelphia.
165 Border of Success—Importance of Careful Attention to Details in Eye and Ear Work. L. H. Buxton, Oklahoma City, Okla.
166 Severe Type of Typhoid with Management and Treatment. B. L. Hale, Philadelphia.
167 Action of Glandular Extracts on the Pupil. I. Ott and J. C. Scott, Philadelphia.
168 Antidotal Effects of Alcohol on Phenol. H. J. Novak, Philadelphia.

160. Abstracted in The Journal, June 5, 1909, p. 1864.

161. Abstracted in The Journal, May 29, 1909, p. 1782.

162. Published in the *Journal of Abnormal Psychology*, June-July, 1909.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

August 28

1 Peripheral Circulation and its Treatment. Sir J. Barr.
2 The Crescendo Murmur of Mitral Stenosis. E. M. Brockbank.
3 *The Blood in Chorea and Rheumatism. C. J. Macalister.
4 *Enterospasm Simulating Acute Obstruction. F. E. Wynne, and F. P. Sturm.
5 Achondroplasia Occurring in a Chinaman. G. Moir.
6 *Dercum's Disease. G. McMullan.
7 Latent Infections by the Diphtheria Bacillus. P. W. Williams, R. M. Buchanan, D. Forbes, and R. V. Clark.
8 Endemicity of Influenza. A. W. Gilchrist.
9 Connection Between Cattle Fairs and Tuberculosis in Ireland J. D. Wynne.
10 Early Diagnosis of Tuberculosis. A. Calmette.
11 Influence of the Site of Inoculation. L. Noon.
12 *Inoculation Treatment of Tuberculosis. D. W. Carmalt-Jones.
13 *Bacteriology and Vaccine Treatment of Acne Vulgaris. A. Fleming.
14 Bacteriology of Common Colds. C. H. Benham.
15 Treatment of Edema. [illegible]
16 Facts and Fancies in [illegible] Dixon.
17 Action of the Pressor [illegible] Meat, Placenta, and Ergot on the [illegible] E. Dixon and H. H. Dale.
18 Effect on the Leucocyte Count Produced by Thiosinamin Injections. F. J. Charteris.
19 New Member of the Saponin-*Digitalin Group of Glucosides.* B. Moore, F. W. Baker-Young and S. C. M. Sowton.
20 Lesions of the Mucous Membranes in Cutaneous Disease. Sir M. Morris.
21 *Acanthosis Nigricans. R. B. Wild.
22 *Idem. G. St. George, and G. M. Melville.
23 Preventive Treatment of Puerperal Eclampsia. A. M. Bankier.
24 *Continuous Proctoclysis. H. J. Paterson.
25 Soamin (Sodium Para-Aminophenylarsonate) in Syphilis. A. Fraser.

3. **The Blood in Chorea and Rheumatism.**—Macalister is of the opinion that there is less real association between chorea and rheumatism than is generally thought to be the case, and that chorea may be due to an infective toxemia of distinctive character. The results of his experiments show (1) that there appears to be in the blood plasma of patients suffering from chorea a poison which is toxic to the leucocytes of healthy persons, and (2) that in rheumatism the plasma does not appear to be so uniformly toxic; in fact, it seemed to be hardly at all poisonous to healthy leucocytes. In the first two cases of chorea which were investigated there was a marked eosinophilia. The counts showed 20 per cent. of eosinophiles in one, and 16 per cent. in the other. Macalister thought this might possibly have been due to some unsuspected intestinal parasites, but examination of the stools for eggs, etc., gave absolutely negative results. Six or eight chorea bloods have been examined since then, and, with one exception, they have all presented this peculiarity. There has been no eosinophilia in any of the numerous cases of acute rheumatism examined.

4. **Enterospasm Simulating Acute Obstruction.**—The case reported by Wynne and Sturm was one of association of an old appendicular trouble with enterospasm, suggesting a reflex origin of this curious condition, and a possible explanation of certain cases of fecal vomiting as the peristaltic action was reversed. The patient gave a history of repeated attacks of biliary colic, which was curious, since only one gall-stone was found, and that in the appendix. Many other gall-stones must have succeeded in passing the trap. A similar, though much less severe, attack of three years previously had been relieved by a natural action of the bowels. The case was a perfect clinical picture of acute abdominal mischief, but without the abdominal rigidity usually associated with such conditions. The unexpected collapse and death of the patient suggested that even a moderate amount of abdominal manipulation in these spastic conditions of the bowel involves an inordinate degree of shock.

6. **Dercum's Disease.**—The case reported by McMullan presented almost all the characteristic symptoms of adiposis dolorosa—the history of numbness and pain, followed by diffuse symmetrical fatty deposits, the associated hemorrhages; the presence of hyperesthetic areas; and the general debility and harsh, dry skin. The patient, a woman, aged 61, was fairly bright and intelligent, but complained of some loss of memory. There was nothing about the case, however, to suggest myxedema. McMullan gave her thyroidin, grs. v, t. i. d., and after scarcely two weeks the pains had almost disappeared, the numbness and tingling had been very much alleviated, and there was a distinct reduction in size of the right arm, of almost ½ inch. The woman felt very much better, and could sleep and do a little work better than she could for several months previously.

12. **Inoculation Treatment of Tuberculosis.**—The total number of patients with tuberculous disease treated by Carmalt-Jones is 367. They all attended as out-patients, and though they included more well-to-do persons than usual in such practice, there was a large preponderance of the poor. The number of each kind of case treated are as follows: Lymphatic glands 155, joints 70, ulcer, sinus and abscess 50, genitourinary tract 34, lupus 23, lungs and pleura 10, bone 8, dactylitis 7, peritonitis 5, eye 3, and larynx 2. In 8 of the 87 cases of tuberculous lymphatic glands inoculation was employed as an adjunct to removal by operation, in every case with satisfactory results and with no recorded recurrence. In 79 patients in whom inoculation was the chief method of treatment, 37 were males and 42 females. In 10 the affected glands were either in the axilla arm or groin; in all the rest they were in the neck. The treatment of these patients has consisted in inoculating them, subcutaneously, with Koch's emulsion of tubercle bacilli, generally known as B. E. The doses are minimal at the outset, and repeated at intervals of ten days, a dose not being increased till it has ceased to have a therapeutic effect. The minimal dose is usually 1/15,000 or 1/20,000 mg., the smaller dose being always used for children. The maximal dose for children under 5 is 1/10,000, for older children and adults it rarely exceeds 1/4,000; in a few instances 1/3,000 has been used and 1/2,000 is recorded. Of these 79 patients, 27 are cured, 22 are much better, 18 are better, 8 are unchanged and 4 are worse. The patients in whom the glands were involved were, on the whole, decidedly bad cases. An indication of this is the fact that of the 79, 43, or more than half, had been operated on previously, and 21, or one-quarter,

had had more than one operation; 5 of them had had ten operations or more. Of the patients cured, 9 out of 27 had been operated on; of those much better, 14 out of 22; of those better, 11 out of 18; and 9 out of 12 of those unchanged or worse. The second variety of tuberculous infection studied was a group in which are included ulcer, sinus and abscess, 50 cases in all. The results show 10 cures, 20 patients much better, 9 better, 8 unchanged and the rest doubtful. The dose employed among patients cured has averaged 1/15,000 mg. minimum and 1/7,000 mg. maximum for children and 1/15,000 minimum and 1/5,000 maximum for adults. Thirty-four patients with tuberculosis of the genitourinary tract have been treated, in 9 cases the testes were involved, in 8 the kidney, and in 17 the bladder. Of the testis cases three patients are cured, 2 are much better, 3 better and 1 is dead. The death occurred after childbirth, and at the time when the renal symptoms were improving. Of the cystitis cases, 2 patients are cured, 4 much better, 8 better, 1 is no better, 1 worse, and in 1 the condition is unknown. Relapse has occurred in 5 cases. The dose should be a very small one at the outset; in 10 out of 15 of the successful cases the initial dose has been less than 7/15,000 mg., often 1/25,000; it may in time be brought as high as 1/4,000, but very bad results may follow excessive initial doses. Treatment in the successful cases has averaged one year and two months, though 5 patients have been treated for six months or less. Lupus has been treated in 23 cases. Three patients are cured—this is agreed, 8 are much better, 9 better, 1 unchanged and 2 unknown. The doses employed are large, of the successful cases only 3 began with 1/15,000 mg. or less, and the average minimum is 1/9,000. Maximal doses vary between 1/2,000 and 1/5,000. Of 10 patients with phthisis or pleurisy, 4 are reported cured or much better, 4 are unchanged. The dose is very small; 1/25,000 to 1/50,000 mg. is the initial dose.

Of 8 patients with bone disease, 2 are cured and 3 are much better; the dose is the same as in cases of adenitis. Of 7 patients with dactylitis, 2 are cured, 2 are better, and 1 unchanged. One patient with peritonitis is cured, 2 are better and 1 is unchanged. Three patients with ocular tuberculosis in the cornea, chorioid and retina, respectively, are all described as much better. Both patients with laryngitis are unchanged. Carmalt-Jones says that tuberculosis of lymphatic glands is the form most amenable to inoculation treatment, nearly 1 in 3 being cured, and (including cures) 5 in 8 much improved. Next comes ulcer, with 1 in 5 cured and 3 in 5 much improved. In the genitourinary tract 1 in 5 are cured, and 3 in 7 much improved, and in lupus 1 in 8 are cured, and 1 in 2 much improved.

13. **Acne Vulgaris.**—Fleming has obtained better results in the treatment of acne vulgaris from the use of a combination of staphylococcus vaccine and acne bacillus vaccine than from either vaccine alone.

21. **Acanthosis Nigricans.**—There are several points of interest in Wild's case; one is the association of the skin changes with carcinoma of the left supraclavicular glands and the prior appearance of the latter. In the absence of any postmortem examination it is impossible to say what organ was involved in this case, as there were no symptoms of disease in any abdominal viscus, but the probabilities seem to be in favor of the cardiac end of the stomach, where carcinoma may exist for a considerable time without localizing symptoms. The pancreas, however, cannot be excluded, and suprarenal disease is possible, although the condition of the blood seemed to be against it. A second point of interest is the condition of the blood. At first sight any observer would have called the patient anemic, save for the redness of the lips and the mucous membranes. Closer examination of the skin showed this appearance of anemia to be due to the obscuration of the superficial blood-vessels by the opacity of the thickened skin. The blood-count showed only slight anemia, and beyond the deficiency of red corpuscles the blood was practically normal within a few weeks of death. There was no marked leucocytosis. Finally, should be pointed out the predominance of the lesions on the upper half of the body and hands and the freedom from any sign of disease on the feet and legs below the thighs.

22. **Idem.**—The authors supply a detailed review of the literature of this disease, and report a case.

24. **Continuous Proctoclysis.**—The apparatus employed by Paterson consists of an electroplated douche-can, which holds about five pints. In the front of the can is a thermometer and a gauge glass, and the can is graduated in half-pints, so that the amount of saline solution entering the rectum can readily be estimated. The solution leaves the can through a delivery tube with a half-inch bore, to which is attached three feet of rubber tubing connected with a large rectal tube. Under the bottom of the can is an electric heater, which can be connected with any electric supply of suitable voltage by means of a flexible cord and wall plug. The can is suspended on an adjustable stand mounted on castors so that it can readily be wheeled up to the bedside.

Lancet, London

August 28

26 *Students' Number.

26. This issue is devoted entirely to the discussion of topics of interest to medical students.

Medical Press and Circular, London

August 18

27 Acute Leukemia. A. Hertz.
28 Regulation of Marriage by the State. S. A. Bontor.
29 Etiology, Diagnosis, and Prophylaxis of Typhoid Fever in India. D. Semple.
30 Origin of Infectious Diseases. A. S. Ashmead.
31 Alcohol and its Effects on the Child. I. Doczi.

August 25

32 Feeble-Minded Children. A. F. Tredgold.
33 Treatment of Severe Cases of Chronic Colitis. J. P. L. Mummery.
34 *New Procedure for the Treatment of Diseases of the Nose. E. Sprenger.
35 Sleeping Sickness: A Study of the Tsetse Fly. E. D. W. Greig.

34. **Treatment of Diseases of the Nose.**—If the nasal mucous membrane becomes chronically affected from any cause, the nose does not act as under normal conditions; it does not receive the physiologic stimulus necessary to health; it changes still more into a condition of disease, for that reason again it does less work, etc. Spengler terms this a *"circulus vitiosus."* To bring about an improvement in the diseased part we must provide for longer pauses for rest, that is, we must bring about a temporary state of rest, and for this the mechanical, thermic and chemical stimuli must be kept back as much as possible. To accomplish this Spengler constructed small, clear yellow balls or pellets of porous India rubber, the so-called sponge-rubber. They are about 12 mm. in diameter, and are furnished with a stalk for the purposes of easy handling and cleanliness. These little balls are inserted into the lower part of the nostril and retained there for from half to three-quarters of an hour several times a day. First, a feeling of fulness is felt in the nostril, but also one of increased warmth. Very soon, however, a feeling of great relief comes on. The sensation of dryness that is often so troublesome disappears as the increased blood supply increases the secretory action of the glands. When the pellet is removed the nostril that has carried it is free, just as after an application of a weak solution of cocain, and agreeably moist. It can now be cleansed easily. This condition of relief often lasts from one to two hours, and when it passes off can easily be brought about again by the same means. Wearing the pellets regularly for several months is said to cause a marked improvement, or even complete recovery.

Clinical Journal, London

August 25

36 Obscure Fractures. E. M. Corner.
37 Antepartum Hemorrhage. H. R. Andrews.

British Journal of Children's Diseases, London

July

38 Glioma of the Spinal Cord. G. Peacocke.
39 Fetal Rickets. J. R. Charles.
40 *Treatment of Cerebrospinal Meningitis in Children with Flexner and Joblin's Antiserum. N. P. Marsh, and O. T. Williams.
41 Irregular Uterine Hemorrhage in a Young Girl. G. Gibb.
42 *Intussusception. C. P. B. Clubbe.

40. **Treatment of Cerebrospinal Meningitis.**—As the result of clinical observations in 14 cases, Marsh and Williams believe that the use of Flexner's serum in cases of cerebrospinal meningitis which are diagnosed early promises extremely favorable results, and is worthy of the consideration of those who have to deal with this condition. Even in cases which are not diagnosed so early, the serum undoubtedly favors the prognosis, and it, or frequent lumbar puncture, or both combined, have a good deal to do with the prevention of the after-conditions.

42. **Intussusception.**—Clubbe has had under his care 173 cases of intussusception; in 157 laparotomy was done, and in 16 the intussusception was reduced by injection. Of the first 50 operated on, 25 died, a mortality of 50 per cent.; of the second 50, 12 died, a mortality of 25 per cent.; of the third 50, 4 died, a mortality of 8 per cent.; among the last 7 there were no deaths. In his opinion the correct and only treatment is laparotomy.

Obstétrique, Paris

July, II, N. S., No. 7, pp. 473-544

43 *Torsion of Uterine Fibromas in Pregnancy. G. Piquand and J. Lemeland.
44 *Suprasymphyseal Cervical Cesarean Section. F. Fraipont.

43. **Torsion of Uterine Fibroma During Pregnancy.**—Piquand and Lemeland review the history of this contingency and discuss the diagnosis which is always very difficult unless the presence of the fibroma is known beforehand. In one case on record, the disturbances were subacute and the tumor changed its consistency and grew hard as the uterus contracted under the exploring hand, permitting the exact diagnosis. It is necessary to exclude kidney colic, appendicitis and tubal rupture. An ovarian cyst is usually more elastic and more movable, and its displacement is not communicated to the uterus. The torsion of a uterine fibroma is one of the most serious complications of pregnancy. The irritation of the uterine muscle may entail expulsion of the ovum. The fibroma left to itself almost invariably becomes gangrenous. The details of 25 cases on record are tabulated, with 5 fatalities. In the 3 cases in which no operation was attempted, the patients all died, while only 2 died in the operative cases. In the 13 cases of torsion of the fibroma the pregnancy continued to term in 8 cases, while the children were still-born in the others, including 3 abortions. In the 12 cases in which the torsion involved the uterus, the pregnancy continued to term in only 3. In the other cases abortion occurred or the gravid uterus had to be removed. The vascularization of the gravid uterus renders hemostasis difficult, but it was accomplished in all the cases. To ward off abortion, the patient should be kept under the influence of opium before, during and several days after the operation. In Lepage's case, the pedunculated myoma was removed, after which the torsion of the uterus became spontaneously reduced and the pregnancy continued to term. The intervention should be as restricted as possible, safeguarding the mother while respecting the pregnancy, but not hesitating to remove the uterus and contents in case of necessity.

44. **Suprasymphyseal Cesarean Section.**—Fraipont reports eight cases in which he followed the Sellheim or modified Frank technic. There has been no tendency to retroversion in any of his cases; this has been suggested as a possible complication from fixation at the site of the wound in the front of the cervix. Recovery is more rapid than after pelvis-enlarging operations. He regards every woman as infected when labor has been under way for some time, the membranes prematurely ruptured, or the vagina examined several times. The microbes in these cases are as dangerous for the cellular tissue of the pelvis as for the peritoneum. If the child is living there is no other alternative in the infected cases than the Porro or the Sellheim operation.

Presse Médicale, Paris

August 14, XVII, No. 65, pp. 577-584

45 *Foreign Bodies in the Esophagus and Bronchi and False Foreign Bodies. (Corps étrangers et faux corps étrangers de l'oesophage et des bronches.) Guisez.
46 *The Effects of Lactic Bacilli on Intestinal Digestion. (Les effets de la bactériothérapie lactique sur la digestion intestinale.) H. Labbé and G. Vitry.
47 *Hemoptysis Supplementary to the Menses. (L'hémoptysie essentielle supplementaire des règles existe-t-elle?) A. Martinet.

August 18, No. 66, pp. 585-592

48 Instrumental Dilatation of Cervix for Rapid Delivery. (De l'accouchement méthodiquement rapide par dilatation instrumentale du col utérin.) E. Bonnaire.
49 Liver Disturbances in Psychosis with Polyneuritis. (Des troubles hépatiques dans les psychopolynévrites.) Arsimoles and Halberstadt.

August 21, No. 67, pp. 593-600

50 *Manual Dilatation of Cervix for Rapid Delivery. (L'accouchement méthodiquement rapide par dilatation manuelle du col utérin.) E. Bonnaire.
51 Radium Therapy in Concrete Sebaceous Acne or Senile Keratoma. Barcat.
52 *Fluctuations in Composition of Urine in Health and Disease. (L'indosé urinaire.) H. Labbé and G. Vitry.

45. **Foreign Bodies in the Esophagus or Bronchi.**—Guisez has had 42 cases of this kind in the last five years and here gives illustrations of the instruments which he has found most useful. He comments on the remarkable tolerance of the esophagus for foreign bodies; in one case a 10 centime piece was removed that had been in the esophagus for four years without causing much disturbance. The foreign body may have passed on, but pain in swallowing may persist for some time afterward. In 19 cases of foreign body in the esophagus Roentgen-ray examination gave positive results in only 10 cases. In 3 cases the dyspnea, cough and attacks of suffocation seemed to indicate that the foreign body was in the air passages. Even radiography may prove deceptive as the foreign body is found later in the esophagus. In 2 cases Guisez was able to remove a scrap of bone which had caused symptoms diagnosed as due to pulmonary tuberculosis, but all subsiding after removal of the foreign body. There is only one way to be sure as to the presence and nature of the foreign body, and that is by direct visual inspection, bronchoesophagoscopy.

46. **The Effect of Lactic Bacilli on Intestinal Digestion.**—Labbé and Vitry report the findings in normal subjects taking lactic bacilli on a test diet for periods of from four to fifteen days. The proportion between the ethereal sulphates and the nitrogen in the urine remained constant, showing that this proportion has no connection with intestinal fermentation. The findings demonstrated that the absorption of nitrogen is much reduced under the influence of lactic ferments. They are contraindicated therefore when it is desired to give the patient a diet rich in nitrogen.

47. **Hemoptysis Supplementary to the Menses.**—Martinet warns that hemoptysis may occur in the absence of pulmonary trouble as a supplement to the menses. Ventura has published a case in which periodical hemoptysis occurred at times in place of the menses through three generations in some members of the family free from tuberculosis, syphilis, hemophilia or a heart defect. Martinet reports one out of several in his own experience. His patient was a healthy young woman nursing her second child. After two days of menstrual flow it ceased abruptly and a severe hemoptysis was observed. This occurred only once, and there have been no symptoms on the part of the lungs during the eight years since. In other cases epistaxis has supplemented or taken the place of normal menstruation.

50. **Manual Dilatation for Rapid Delivery.**—Confidence, patience and perseverance are necessary for successful dilatation of the cervix with the hand alone without injury of the parts. The muscular effort is no more than that required for instrumental dilatation, and twenty minutes are usually sufficient for the task, although over an hour may be required in exceptional cases. Its great disadvantage is that the muscles of the hand are fatigued just at the moment when they should be relied on to manage the second stage of labor. In Bonnaire's 171 cases the cervix was lacerated a little in 20; in 5 the tear extended into the segment of the cervix above, and in 2 into the vaginal wall. There were lacerations thus in 15.78 per cent.; and 26 per cent. of women with lacerations succumbed, although the injury cannot be incriminated for the fatality except in 4 per cent.—a mortality about the same as with Cesarean section. The total mortality in the 171 cases was 31, that is, 18 per cent., this method of manual dilatation being applied only in what might be called emergency cases, in which Cesarean section was the only other resource.

52. **Fluctuations in the Organic Content of the Urine.**—Labbé and Vitry refer particularly to the organic elements in the urine outside of urea, uric acid, xanthin, creatinin and ammonia, which form, for example, 28 out of the total 42 grams of organic constituents of the urine. This proportion of constituents forms on an average from one-fifth to one-half of the total organic contents. The authors have found that this proportion varies with the ingestion of carbohydrates and parallels the albumin ingested. The formula showing the proportion of nitrogen ingested and that eliminated in the urine and the total elimination of organic matters gives a basis for comparison of findings in health and disease which they have found useful for better understanding and treatment of diabetes and glycosuria in general.

Semaine Médicale, Paris

August 25, XXIX, No. 34, pp. 397-408

53 *Measures to Reduce Infant Mortality in France. (Etat actuel des diverse œuvres publiques et privées pour la lutte contre la mortalité infantile en France.)
54 The Phenomenon of Life. (Le phénomène vital d'apres les récentes données de la biologie et de la médecine.) S. Jankelevitch.

53. **The Campaign Against Infant Mortality in France.**—In this special article the public and private institutions and organizations for reducing infant mortality throughout France are reviewed in detail, and their results. In this first installment the protection of the child before its birth and of the mother during confinement are especially considered.

Beiträge zur klinischen Chirurgie, Tübingen

June, LXIII, No. 3, pp. 447-812

55 Operations in Posterior Cranial Fossa. (Operationen in der hinteren Schädelgrube.) H. Rubritius.
56 *Treatment of Actinomycosis at Wölfler's Clinic (Prague) and Ultimate Results. R. Maier.
57 *Ileocecal Tuberculosis. H. Els.
58 *Gall-Bladder and Liver Surgery. (Erfahrungen über Chole- d Leberchirurgie.) O. Haist.
59 f Tendons. (Traumatische Sehnen-
60 (Zur Frage der Sensibilität der Bauchhöhle.) Propping.
61 *Movable Cecum. (Klinische und anatomische Fragestellungen über das Coecum mobile.) H. Klose.
62 Primary Inflammation of the Cecum. (Ueber primäre Typhlitis.) F. Cordes.
63 Weight-Bearing Conditions in the Bones of the Legs. (Die Belastungsverhältnisse am normalen und am pathologisch deformierten Skelett der unteren Extremität.) W. Hagen.
64 Two Cases of Contusion Rupture of Spleen. (Beitrag zu den subkutanen Milzrupturen.) A. Hoffmann.
65 Roentgen-Ray Examination for Splinters of Glass. (Der radiographische Nachweis von Glassplittern.) G. v. Saar.

56. **Treatment of Actinomycosis at Prague.**—Maier states that no cases of actinomycosis in the thorax were encountered, but he gives the particulars of 30 cases of such lesions in the head and neck, 7 in the abdomen and 2 cutaneous lesions of peculiar malignancy. Only prompt amputation of the arm with the primary lesion could have saved one of these last two patients from the acute fatal sepsis. In conclusion, he tabulates the total experience with 56 cases in which treatment was by iodid alone, with 34 cures; 94 with operation alone, with 75 cures; 109 with excision plus iodid, with 60 cures, and 30 in which treatment was by other measures, with 25 cures. All but 46 of the cured patients have been re-examined recently. He calls attention to the fact that the deaths during the years since were in many cases reported as having been due to tuberculosis, while there is a possibility that the supposed tuberculosis may have been merely a metastasis in the lung from the old actinomycotic infection in some of these cases. His conclusions from a review of nearly 300 cases are that actinomycosis when circumscribed should be resected like any other tumor. If this is not possible or if the affection is diffuse he advocates administration of potassium iodid internally with partial resection. His experience in one case encourages further trials of tuberculin in actinomycosis, as the cure in this case can be ascribed, he thinks, only to the course of tuberculin treatment. The iodid does not require such large dosage as some advocate; his preference is for 1 gm. the first day, 2 gm. the second, 3 gm. the third (from 15 to 45 grs.), repeating the same succession after suspension for three days. Sometimes he gave from 2 to 5 gm. a day in powders, supplemented by local applications of a 10 per cent. solution of potassium iodid. To avoid the possibly deleterious effect of potassium iodid on the heart, he gives sodium iodid in preference and has found it equally effectual. In case of diffuse lesions in the abdominal cavity, tuberculin treatment may effect a cure as in the case reported; the affection had lasted for two years and the patient received 68 injections of "old" tuberculin, the total amount being nearly 100 c.c. injected between May, 1904, and January, 1906. At first there was a lively local reaction to the smallest amount injected, with general febrile reaction, but the reaction grew less and less until there was none at all, even when 6 gm. was injected at a dose. The patient was re-examined nearly nine months after he had been discharged cured, and no traces of recurrence could be detected. The first fistula in this case developed four weeks after the first signs of the tumor in the region of the umbilicus.

57. **Ileocecal Tuberculosis.**—Els reports ten cases of a tuberculous process in the ileocecal region; all the patients recovered after resection, with a single exception, and eight are still in good health, the interval ranging from seven months to nearly seven years. The report issues from Garré's clinic at Bonn.

58. **Gall-Bladder and Liver Surgery.**—Haist analyzes 82 cases of gall-bladder and liver disease requiring operative treatment in Hofmeister's service at Stuttgart. In conclusion, he emphasizes the necessity for regarding every laparotomy as an exploratory operation; notwithstanding the immediate discovery of what seems ample cause for the symptoms, yet careful search should be made for unsuspected lesions, especially in gall-stone affections, as they are liable to induce numerous changes in the environment.

61. **Movable Cecum.**—It was formerly supposed that the study of the topography of the various loops of the intestines offered no practical results, but Klose and others are now calling attention to movability of the cecum as an index of defective development. It may cause no disturbances or may induce colics and inflammation, remedied by simple intraperitoneal cecopexy.

Berliner klinische Wochenschrift

August 23, XLVI, No. 34, pp. 1557-1596

66 Case of Traumatic Abdominal Hernia in Unusual Location. (Fall von traumatischer Bauchhernie.) H. Schmid.
67 *Monoplc mer.
68 *Throat (Rachen- und Kehlkopf- sympt
69 Simulat leine. (Vortäuschung und in der sozialen Medizin.) A. Peyser.
70 * reign Bodies. (Intra- lkörper.) C. Posner.
71 and Reversible Phylo- o. 33.
72 Vitalism and Teleology in the Natural Sciences. Thöle. Commenced in No 33.
73 *Abdominal Manifestations with Commencing Pneumonia. (Appendicitis und Pneumonie.) Schönstadt.

67. **Monoplegic Syringomyelia.**—Wimmer reports three cases of this rare condition. In one case considerable improvement was obtained by Roentgen-ray treatment.

68. **Throat Symptoms of Syringomyelia.**—Baumgarten reports a case of paralysis in the throat and palate, with sensibility and reflexes normal, in which further investigation revealed syringomyelia. There had been no other noticeable disturbances beyond the change in the voice, but the paralysis of the palate and atrophy of the right side of the tongue confirmed the diagnosis of *syringomyelia.* He cites 26 similar cases from the literature and points out that the symptoms in the throat may be the first sign of the affection. In 9 of the 27 cases there was atrophy of the tongue, and there was paresis of the palate in 17. In 3 cases the hoarseness came on suddenly.

70. **Benzin to Dissolve Fat as Foreign Body in Bladder.**—Posner's patient was an elderly woman who had recurring inflammation in the urethra after removal of polyps four years before. Medicated bougies were ordered which she introduced in the urethra herself, but with exaggeration of the previous symptoms, the serious disturbances now simulating a calculus in the bladder. Fat globules were found floating on the urine and the cystoscope revealed small lumps of fat, which were traced to the cocoa butter vehicle of the medicated bougies.

Zentralblatt für Gynäkologie, Leipsic

August 21, XXXIII, No. 34, pp. 1177-1216

102 *The Inflatable Bag in Placenta Prævia. (Metreuryse bei Placenta prævia.) B. Krönig.
103 *Vaginal Operative Treatment of Rupture of Uterus without Hysterectomy. (Operative Heilung der Uterusruptur auf vaginalem Wege unter Erhaltung der Gebärmutter.) E. Solms.
104 Measurement of Diagonal Conjugate. (Messung der Conjugata diagonalis in der praktischen Geburtshilfe.) S. Rebaudi.
105 Index Measure for Distance between Tuberosities of the Ischium. (Beckenmesser für die Abstände im Beckenausgang.) E. Hauch.
106 Radial Paralysis after Fracture of Arm during Delivery. Operative Isolation of Nerve. Recovery. (Radialislähmung nach Oberarmbruch bei der Armlösung.) R. Föth.

102. **The Inflatable Bag with Placenta Prævia.**—Krönig asserts that the metreurynter may reduce the mortality of the children a little, but it has not reduced that of the mothers. In his experience 19 women out of 28 with placenta prævia were treated with the inflatable bag and 4 died, while severe hemorrhage occurred in 6 with the expulsion of the bag, and in 8 there was severe hemorrhage after the birth. He has been compiling statistics of different methods of treatment for placenta prævia, the average being in 6,5[illegible] cases a maternal mortality of from 5 to 7 per cent. and of the children of from 50 to 70 per cent. He refers in conclusion to a recent discussion in America of the advantages of Cesarean section in placenta prævia, remarking that the results communicated there do not apply to his method of procedure. When Cesarean section is not done until the end of the period of dilatation, there is no security against fatal after-hemorrhage, for by that time the insertion of the placenta in the isthmus has already been stretched, which is what he expressly tries to avoid, and, with the defective contraction of this segment of the uterus, hemorrhage is likely to follow.

103. **Suture of Ruptured Uterus by Way of the Vagina.**—Solms refers only to the ruptures in the lower segment of the uterus, and reports three cases in which he applied this technic. A horseshoe incision is made around the vaginal portion of the uterus, thus permitting the drawing out of the cervix after the bladder has been separated from it. Dührssen has applied a similar technic, and Solms expatiates on the lessened shock and lessened danger of sepsis, peritonitis and hemorrhage.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 15, XXX, No. 97, pp. 1017-1032

107 The Blood Picture in Cancer. (Formola ematica nel cancro in generale, con speciale riguardo ai leucociti.) A. Poggiolini.

August 19, No. 99, pp. 1041-1048

108 Difference between the Temperature in the Two Axillæ in Tuberculosis. (Differenze fra le due temperature ascellari nei tubercolosi.) L. Casali.

August 22, No. 100, pp. 1049-1064

109 The Ocular Tuberculin Reaction. (Sul comportamento clinico della reazione congiuntivale di Calmette.) P. Nassetti.
110 Differentiation of Malta Fever. P. Bueri.

Riforma Medica, Naples

August 16, XXV, No. 33, pp. 897-924

111 Pathologic Anatomy of Central Nervous System in Chorea. (Sistema nervoso centrale nel cosidetto stato coreico.) R. Ciauri.
112 Experimental Research on Anastomosis of Stumps of Severed Vas Deferens. (Sopra alcuni particolari reperti ottenuti nell' anastomosi dei monconi del condotto deferente reciso.) A. Marassini.

August 23, No. 34, pp. 925-956

113 *Suprarenal Theory of Osteomalacia. Unilateral Capsulectomy and Pregnancy. (Teoria surrenale dell'osteomalacia; capsulectomia unilaterale, e gravidanza.) T. Silvestri and C. Tosatti.
114 *Advantages of Treating Hydatid Cyst by Injection of Silver Fluorid. (Cisti da echinococco dello spazio del Retzius guarita col metodo Biondi.) A. Gasbarrini.

113. **Suprarenal Theory of Osteomalacia.**—Silvestri has been repeating Bossi's experiments with removal of the suprarenal capsules in gravid animals to determine whether any tendency to osteomalacia could be detected afterward. He experimented on rabbits and guinea-pigs and was unable to discover evidences suggesting any such influence on the skeleton from unilateral capsulectomy. The animals all aborted, however, in from nine to thirty days; in 2 the abortion was internal, and the embryos were absorbed. This could not have been the result of the operative trauma, as the animals had all recovered completely from this before the abortion occurred. No appreciable morbid changes were found in the ovaries o mals. It seems probable, he thinks, that osteomal *result of hyperfunctioning of the ovaries which* companied later by perverted functioning. ment seems to have a rational basis, as the supra bly have an antagonistic action to that of the theory is confirmed by recent research, which has while thyroidectomy prevents the *development of atheroma, castration, on the other hand, brings it on* idly and more severely. The abortion in the animal ably the result of the insufficiency of the chrom similar to the constant abortion of gravid rabbits roidectomy. In conclusion, he gives five argument the assumption of the infectious nature of osteomala *fact that in 90 per cent. of the cases the patients* and in more than 80 per cent. women who have borne the negative histopathologic and bacteriologic findings, fact that while the osteomalacic bones continue to the cultures of the diplococcus incriminated by Arca mal bones are not affected in the slightest.

114. **Silver Fluorid Injection in Treatment of Hy**- In the case *described, excellent results* were obta posing the non-adherent cyst with a laparotomy and ing it by means of a cannula and then injecting c.c. of a 1 to 1,000 solution of silver fluorid.

Hygiea, Stockholm

July, LXXI, No. 7, pp. 641-767

115 First Medical Degrees Granted in Sweden. (De första promotionerna vid de svenska högskolorna.) C.
116 Treatment of Syphilis. (Till frågan om behandlingen syfilitiska sjukdomen.) E. Welander.
117 Seven Cases of Exophthalmic Goiter in the Insane. Basedow[illegible] hos sinnessjuka.) V. Wiegert.

Ugeskrift for Læger, Copenhagen

August 5, LXXI, No. 31, pp. 881-910

118 Spring Brace for Deformity of the Spine. (Anvend nyt Princip ved Behandlingen af Columnas Deform. E. Nyrop.

Books Received

All books received are acknowledged in this column and acknowledgment must be regarded as a sufficient return f courtesy of the sender. A selection will be made for review interests of our readers and as space permits.

TRANSACTIONS OF THE MISSISSIPPI STATE MEDICAL As FORTY SECOND ANNUAL SESSION, 1909. Cloth. Pp. 363.

PROCEEDINGS OF THE THIRTY-NINTH ANNUAL MEETING NEW JERSEY PHARMACEUTICAL ASSOCIATION, 1909. Cloth. 251.

MINOR AND OPERATIVE SURGERY INCLUDING BANDAGING Henry R. Wharton, M.D., Surgeon to the Presbyterian Ho Seventh Edition. Cloth. Pp. 657, with 555 Illustrations. $3. New York and Philadelphia: Lea & Febiger, 1909.

THE HIGHER FUNGI OF THE CHICAGO REGION. Part I. Hymenomycetes. By Dr. Will Sayer Moffatt. Bulletin N Part I, Natural History Survey. Paper. Pp. 156, with ill tions. Chicago: Published by the Academy, June, 1909.

A MANUAL OF LABORATORY METHODS. By E. M. Perdue, M.D., Professor of Histology, Bacteriology and Clinical D in Hahnemann Medical College, Kansas City, Mo. Cloth. P with Illustrations. Price, $1.50. Kansas City: Burton 1909.

THE SECRET OF SEX. The Discovery of a New Law of N How Sex is Caused. By E. Rumley Dawson, L.R.C.P., L M.R.S.C., England, Fellow of the Royal Society of Medicine. Pp. 61. Price, 50 cts. New York: Cochrane Pub. Co., T Building.

CARE OF MOTHER AND CHILD. By Clarence M. Cheadle, Member American Medical Association. With an Introducti Charles Edwin Ruth, M.D., formerly Professor of Surgery Anatomy, Keokuk Medical College, now of Ponce, Porto Cloth. Pp. 354. Price, $2. Published by the Author, A Ill., 1909.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE Arthur R. Edwards, A.M., M.D., Professor of the Principles Practice of Medicine and of Clinical Medicine and Dean of the ulty in the Northwestern University Medical School, Chicago. Edition. Cloth. Pp. 1212, with 100 engravings and 21 p Price, $5.50. New York and Philadelphia: Lea & Febiger, 19

THE PRACTICAL MEDICINE SERIES. Under the General Edit charge of Gustavus P. Head, M.D., Professor of Laryngolog Rhinology, Chicago Postgraduate Medical School. Vol. VI., G Medicine, Edited by F. Billings, M.S., M.D., Head of the M Department and Dean of the Faculty of Rush Medical C Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Ill *Postgraduate Medical School.* Cloth. Pp. 345, with Illustrati Price, $1.50; or $10 the series of 10 volumes. Chicago: The Book Publishers, 1909.

After rinsing out the bladder with salt solution, Posner injected 15 c.c. of pure benzin, which was retained for fifteen minutes. All disturbances ceased at once, as the bladder was thus completely cleaned out, without by-effects of any kind. The bougies used had been unusually long, fully 11 cm. in length.

73. **Abdominal Phenomena with Incipient Pneumonia.**—Schönstadt *protests against Glaserfeld's communication on the* "abdominal phenomena with incipient pneumonia," mentioned in The Journal, September 11, page 901. He interprets the syndrome described as cases of appendicitis with involvement of the lungs, and is convinced that appendicectomy in time might have warded off the lung trouble.

Deutsche medizinische Wochenschrift, Berlin

August 19, XXXV, No. 33, pp. 1417-1464

74 Conception of Disease. (Ueber den Krankheitsbegriff und verwandte Begriffe.) L. Aschoff.
75 Organotherapy of Incipient Senile Cataract. (Zur spezifischen Therapie des beginnenden Altersstares.) P. Römer.
76 Trachoma Bodies in Section [illegible] (Darstellung der Trachomkörper im [illegible] Herzog.
77 *[illegible] Wirkungen der [illegible]
78 [illegible] Bacilli in Sputum. (Ver- [illegible] Ligroin für den Nachweis der [illegible] G. Bernhardt.
79 *[illegible] Gall-Bladder in Bacillus-Car- [illegible] und Cholezystektomie.) W. Loele.
80 *Surgical Treatment of Peritonitis. Dege.
81 *Origin of Ileus after Appendicitis. (Zur Entstehung des Ileus nach Blinddarmentzündung.) Id.
82 Technic for Prostatectomy. (In welcher Gewebsschicht findet bei der sogenannten Prostatectomie, insbes. der suprapubischen, die Exstirpation der hypertrophischen Teile statt?) A. Rothschild.
83 Insignificant Disinfecting Properties of Ordinary Mouth Washes. (Die desinfizierende Wirkung einiger gebräuchlicher Zahn- und Mundwässer auf pathogene Bakterien.) R. Bassenge.
84 Anatomic Conditions that Favor Local Anesthesia in the Jaws. [illegible] ngen im Ober- und Unterkiefer [illegible] thesie bei zahnärztlichen Opera- [illegible]
85 [illegible] n Pharmaceutical Preparations. [illegible] einiger pharmazeutischer Präparate.) R. Sodemann.

77. **Injurious Action of Sun-Baths.**—Grawitz announces that he has witnessed the development of nervous disturbances in a number of persons after prolonged exposure to the sunlight. Some of the patients had been taking sun-baths, an institution in the vicinity offering men an opportunity for bathing in the river and taking sun-baths, naked for hours at a time, day after day. Aside from the sunburn he found the heart action accelerated, with systolic murmurs at the various valves, the dulness increased toward the right, decreased toward the left, pulse with much tension, accentuated second sound and, in a few cases, collapse of the heart with threatening general symptoms. The temperature was increased in some of the patients, but he never encountered albuminuria. The headache and general depression sometimes persisted for days; in other cases the nervous system was much excited. The connection between these nervous symptoms and the sun-baths was evidenced by their development in previously healthy men and their subsidence as soon as the individuals refrained from this excessive exposure to the sun. In some instances the family was much alarmed at the severity of these nervous attacks. Grawitz does not ascribe the effect to the heat so much as to the action of the sun on the unprotected head. The exciting action of the sunlight is particularly evident in children allowed to play on the beach for hours at a time. These children return home brown and ruddy, but with unstable nervous system, so that the desired benefit from the stay in the country has not been attained. He insists that children should not be allowed to play in the sun between noon and 4 p. m., but should always be sent into the shade to play during the heat of the day. He ascribes much of the prevalent general nervousness and heart irregularities to excessive exposure to sunlight. In treatment, cool applications to the head and heart, cool drinks, and, in the severer cases, analeptics, are indicated, but prophylaxis is of the greater importance, and he advises warning the parents and friends of persons who risk their health by these excessive exposures of the danger they incur.

79. **Typhoid Bacilli-Carriers and Cholecystectomy.**—Loele reports a case in which a patient with cholelithiasis required an operation three months after typhoid fever. Typhoid bacilli had been present in the stools constantly during the interval. The operation revealed that the typhoid bacilli had no foothold in the gall-bladder. No typhoid bacilli could be found in this organ or in the urine, blood, spleen and liver examined postmortem. The suggestion to remove the gall-bladder as the nidus of the typhoid bacilli in the chronic carriers would not have applied in this case.

80-81. **Treatment of Peritonitis.**—Dege discusses the arguments for and against flushing the abdominal cavity in treatment of perforative peritonitis, and describes a case in which ileus followed later from a band-like adhesion which had evidently formed around the drain and tampon. He argues that the proper course is between the two extremes, restricting the amount of tamponing and never inserting a tampon between loops of intestines. In his experience, the Fowler position has always had a favorable influence on the course of peritonitis.

Medizinische Klinik, Berlin

August 8, V, No 32, pp. 1181-1218

86 *Erysipelas in the Aged. (Erysipel im Greisenalter.) H. Schlesinger.
87 *Special Forms of Local Reaction in the Eye after Subcutaneous Injection of Tuberculin. J. Rupprecht.
88 *Polyneuritis and Korsakoff's Psychosis with Colon Bacillus Pyelitis in Pregnancy. M. Semon.
89 Electric Treatment of Bronchial Asthma. O. Gunzel.
90 Pulse Pressure in Arteriosclerosis. (Verhalten des Pulsdruckes bei [illegible] Kisch, Jr.
91 Composition of [illegible] (Bestimmung der Blutbeschaffenhei [illegible] die Verdauung.) Marcus.
92 *Potato or Solanin Poisoning. (Die sogenannte Kartoffel- oder Solaninvergiftung.) v. Haselberg.

August 15, No. 33, pp. 1219-1254

93 *Heart Lesions in Infect[illegible] Diseases. (Herzaffektionen bei Infektions[illegible] Meyer.
94 Normal [illegible] of Adults. (Der "normale" Ernähr[illegible] des erwachsenen Menschen.) G. Oeder.
95 Objective Registration of Conditions in Circulation. (Ueber die Möglichkeit, die Druckkraft des Herzmuskels, die Grösse des Widerstandes im Gefässsystem und die Gesch[illegible] im menschlichen Kreislauf zu best[illegible] sung und die Bestimmung des [illegible]
96 *Constitutional Obesity. (Ueber [illegible]) C. Pariser. Commenced in No. [illegible]
97 *The Wassermann Reaction. J. Bergmann.

86. **Erysipelas in the Elderly.**—Schlesinger states that 288 out of 2,664 cases of erysipelas in his service at Vienna were in persons over 60, that is, in 10.8 per cent. Only 91 of his elderly patients were men. He has been making a special study *of the affection in the aged, and comments on the rarity of* severe heart disturbances in the course of erysipelas; they are seldom observed from the direct action of the infection and its toxins, but after the subsidence of the disease the heart may be left extremely weak, so that the patient may be threatened by the consequences and complications of the erysipelas which he has apparently passed through without harm. Endocarditis is not frequent, but pericarditis and even the suppurative form may follow erysipelas in the elderly. He noticed in the ma*jority of fifteen patients examined for the purpose that leuco*cytosis was high during the infection and rose still higher after its close. The blood formula was not much changed except for the total absence of eosinophiles. Complications on the part of the respiratory organs were no more common than after other infections, but kidney affections were repeatedly encountered with erysipelas in the elderly, especially an acute hemorrhagic process subsiding with the infection. Nervous symptoms were frequent, sometimes mental confusion or delirium, even *with an afebrile course of the erysipelas*, occasionally there were ideas of persecution, but meningitis was scarcely ever observed in the elderly. The erysipelas attacked the face almost invariably; none of his patients presented erysipelas of a mucous membrane, although he knows of one case on record in which the throat was primarily invaded. Unusually frequent were the complications or sequels in the form of suppurative processes in the subcutaneous cellular tissue, especially when the erysipelas was on the limbs. These lesions ranged from abscesses and phlegmons to suppurative venous thrombosis and gangrenous processes. Gangrene of the lids was observed in a few cases, but the eyeball did not suppurate in any instance, and he witnessed the healing in some cases of a deep, extensive gangrenous process, even in women over 80. In 25 per cent. of his 288 cases of erysipelas in the elderly, it terminated fatally, but only 2 succumbed of the

15 patients who were over 80. In treatment the flagging heart of the elderly must be borne in mind and digitalis given when there is suspicion of degeneration; caffein or sodium salicylate may be indicated when the blood pressure drops and the pulse grows slow or if arrhythmia is observed. Anointing the skin after subsidence of the erysipelas is useful in prophylaxis, and the patients should not be allowed to lie long on one spot. Local warmth relieves the disturbances, and even extensive infiltrations may retrogress under it. Compresses wet with Burrow's solution (5 parts alum and 25 parts lead acetate in 500 parts water) or 60 per cent. alcohol have given him better results than any other measures. In combating the frequent sleeplessness he warns against morphin, as weakened elderly patients sometimes cannot bear it. Notwithstanding an apparently desperate condition, the elderly patient with erysipelas may throw it off and recover.

87. **Local Reactions in the Eye After Tuberculin Subcutaneously.**—Rupprecht reports two cases, in women of 18 and 28, in which chorioiditis or serous cyclitis flared up and became severe after a single subcutaneous injection of 10 and 5 mg. old tuberculin. There is a possibility of actual injury from the tuberculin, and the cases further emphasize the necessity, he says, of having expert ophthalmologic examination of the eyes when tuberculin is injected for differentiation of an eye affection; otherwise some minute reaction might be overlooked, and harm result from repetition of the dose. His cases confirm the importance of tuberculosis as a factor in inflammatory affections of the chorioid.

88. **Psychosis and Colon Bacillus Pyelitis in Pregnancy.**—Semon reports the case of a woman of 27 who presented a typical Korsakoff psychosis with polyneuritis and hyperemesis early in her first pregnancy, with colon bacillus pyelitis. He regards the latter infection as probably responsible for the neuritis.

92. **Potato or Solanin Poisoning.**—Haselberg reviews forty-one cases of wholesale poisoning, involving 2,000 troops, and ascribed to solanin poisoning from potatoes, but which he shows were probably due to contamination of the potatoes after they had been cooked and were waiting to be warmed over or used in a salad, being kept in some warm place in the interim. He declares that potatoes never can be in themselves poisonous, and cites research with solanin to confirm the fact that solanin is not very toxic; its toxic dose has not yet been determined.

93. **Cardiac Disturbances with Infectious Diseases.**—Meyer discusses the literature, symptoms, etiology and treatment, remarking that the most promising measure to ward off heart trouble is by serotherapy. Personal research with diphtheria has demonstrated, he asserts, that a proper dosage of diphtheria antitoxin, given at the right time, will certainly ward off circulatory disturbances in animals. It protects against them, but cannot cure if they are already installed. He is convinced that his successful experimental prophylaxis in diphtheria opens bright prospects for serotherapy as a preventive of cardiac complications in other infections (streptococcus infections).

96. **Constitutional Obesity.**—Pariser has been steadily acting on his belief that endogenous obesity is of thyroid origin, and has been administering thyroid extract during the last ten years during all the ups and downs of thyroid treatment. He is rejoicing now that von Noorden has at last conceded that clinical observation compels the assumption of a constitutional obesity, notwithstanding that the laboratory metabolic findings are unable to explain it to date. Pariser describes the first case that opened his eyes to the participation of the thyroid: a woman of 25 with extreme obesity developing soon after panhysterectomy, had taken ovarian tablets perseveringly, but without the slightest effect, but a turn for the better was apparent at once when thyroid treatment was instituted. This and other experiences have convinced him that the thyroid is a secondary sexual organ, like the mammary gland, and that constitutional, endogenous obesity may result from thyroid incompetency. The lack of success from dietetic measures and palpation of the gland may suggest the presence of this form of obesity, and this assumption is confirmed by the efficacy of extremely mild thyroid treatment, increasing from 0.1 to 0.3 gm. of gland substance (in tablet form) in the course of three weeks and then reducing again, with a free interval of a week at the end of the month. His maximal dose is thus less than one-third of the average dosage of the last few years. With this technic he never has any by-effects; if polyuria should develop he would regard it as a sign that the individual dose was too high or the intervals too short. The most reliable index of cumulative action is the pulse. If the pulse runs up to 100 or 110 the thyroid extract should be suspended and rest imposed, not necessarily in bed. The pulse rate was increased in this way in 8 or 10 of his cases, but less frequently since he has perfected his technic. After two or three of these monthly thyroid courses he suspends the treatment for six or eight weeks, but as the aim is to supply a physiologic deficiency, the thyroid extract has to be constantly supplied anew as the deficiency makes itself felt. He insists that constitutional obesity is more than a mere accumulation of fat; it has many points in common with myxedema, even to the temperament and character. Myxedema may be regarded as the last offshoot, run wild, of constitutional obesity. He generally combines dietetic measures with the thyroid treatment, as the endogenous is frequently mixed more or less with the exogenous form. In the pure endogenous variety, however, the thyroid treatment alone will prove effectual.

97. **Seroreaction in Syphilis.**—Bergmann relates the results of application of the Wassermann test in 19 infants and their mothers, the findings sustaining the assumption that the mother of a new-born syphilitic child requires specific treatment even although she may be apparently free from signs of syphilis. The test applied to 75 wet-nurses gave positive findings in 7 and in 5 of this group nothing otherwise suggesting syphilis could be discovered. Signs of syphilis were found, however, in 4 of the women's infants. This proportion of one syphilitic in every 10 or 11 wet-nurses imposes the necessity for applying the test in selecting a wet-nurse. It even suggests the necessity for making the test compulsory before the laity can engage a wet-nurse. The question whether all syphilitic new-born infants give a positive response was answered in the affirmative by his experience with 19 infants with manifestations of syphilis, while it proved particularly valuable in excluding syphilis in some other dubious cases of eczema, eye affections, etc. Occasionally the reaction occurs when nothing to suggest syphilis can be detected. In other cases the reaction, negative at first, becomes positive later, suggesting the possibility of infection from the mother during delivery. In 2 cases a syphilitic mother gave birth to a child apparently free from the taint during the six months the child was under observation. But even when the test is negative he warns against giving the infant of a syphilitic woman to a healthy woman to nurse, but the mother can be allowed to nurse her own child. Close contact between them is unavoidable any way, sooner or later. It has long been the rule in his service that no child less than eight weeks old is given to another woman to nurse; the breast milk is drawn and fed to it.

Wiener klinische Wochenschrift, Vienna

August 19, XXII, No. 33, pp. 1145-1170

98 *Action of Digestive Ferments on Tuberculin. (Einwirkung von Verdauungsfermenten auf Tuberkulin.) T. Pfeiffer and R. Persch.
99 Nature of Antitrypsin in the Serum and Mechanism of Its Action. O. Schwarz.
100 Multiple Neurofibromata. Three Cases. (Zur Kenntnis des Morbus Recklinghausen.) A. Hintz.

98. **Action of Digestive Ferments on Tuberculin.**—This article describes experiments with tuberculin mixed with the various digestive ferments and then applied to the skin for the v. Pirquet test and also in subcutaneous injection. The results testify to the destructive influence of the digestive ferments on the tuberculin. The specific action of tuberculin on the skin was almost completely abolished by mixture with pepsin, trypsin and erepsin.

Zentralblatt für Chirurgie, Leipsic

August 21, XXXVI, No. 34, pp. 1161-1192

101 Changes in the Viscosity of Blood after Operations. (Aenderungen in der Blutviskosität infolge von chirurgischen Operationen.) G. Bolognesi.

Zentralblatt für Gynäkologie, Leipsic

August 21, XXXIII, No. 34, pp. 1177-1216

102 *The Inflatable Bag in Placenta Prævia. (Metreuryse bei Placenta praevia.) B. Krönig.

103 *Vaginal Operative Treatment of Rupture of Uterus without Hysterectomy. (Operative Heilung der Uterusruptur auf vaginalem Wege unter Erhaltung der Gebärmutter.) E. Solms.

104 Measurement of Diagonal Conjugate. (Messung der Conjugata diagonalis in der praktischen Geburtshilfe.) S. Rebaudi.

105 Index Measure for Distance between Tuberosities of the Ischium. (Beckenmesser für die Abstände im Beckenausgang.) E. Hauch.

106 Radial Paralysis after Fracture of Arm during Delivery. Operative Isolation of Nerve. Recovery. (Radialislähmung nach Oberarmbruch bei der Armlösung.) R. Füth.

102. **The Inflatable Bag with Placenta Prævia.**—Krönig asserts that the metreurynter may reduce the mortality of the children a little, but it has not reduced that of the mothers. In his experience 19 women out of 28 with placenta prævia were treated with the inflatable bag and 4 died, while severe hemorrhage occurred in 6 with the expulsion of the bag, and in 8 there was severe hemorrhage after the birth. He has been compiling statistics of different methods of treatment for placenta prævia, the average being in 6,569 cases a maternal mortality of from 5 to 7 per cent. and of the children of from 50 to 70 per cent. He refers in conclusion to a recent discussion in America of the advantages of Cesarean section in placenta prævia, remarking that the results communicated there do not apply to his method of procedure. When Cesarean section is not done until the end of the period of dilatation, there is no security against fatal after-hemorrhage, for by that time the insertion of the placenta in the isthmus has already been stretched—which is what he expressly tries to avoid—and, with the defective contraction of this segment of the uterus, hemorrhage is likely to follow.

103. **Suture of Ruptured Uterus by Way of the Vagina.**—Solms refers only to the ruptures in the lower segment of the uterus, and reports three cases in which he applied this technic. A horseshoe incision is made around the vaginal portion of the uterus, thus permitting the drawing out of the cervix after the bladder has been separated from it. Dührssen has applied a similar technic, and Solms expatiates on the lessened shock and lessened danger of sepsis, peritonitis and hemorrhage.

Gazzetta degli Ospedali e delle Cliniche, Milan

August 15, XXX, No. 97, pp. 1017-1032

107 The Blood Picture in Cancer. (Formola ematica nel cancro in generale, con speciale riguardo ai leucociti.) A. Poggiolini.

August 19, No. 99, pp. 1041-1048

108 Difference between the Temperature in the Two Axillæ in Tuberculosis. (Differenze fra le due temperature ascellari nel tubercolosi.) L. Casali.

August 22, No. 100, pp. 1049-1064

109 The Ocul [illegible] m. (Sul comportamento clinico della [illegible] di Calmette.) F. Nassetti.

110 Different [illegible] P. Bueri.

Riforma Medica, Naples

August 16, XXV, No. 33, pp. 897-924

111 Pathologic Anatomy of Central Nervous System in Chorea. (Sistema nervoso centrale nel considetto stato coreico.) R. Ciauri.

112 Experimental Research on Anastomosis of Stumps of Severed Vas Deferens. (Sopra alcuni particolari reperti ottenuti nell' anastomosi dei monconi del condotto deferente reciso.) A. Marassini.

August 23, No. 34, pp. 925-946

113 *Suprarenal Theory of Osteomalacia. Unilateral Capsulectomy and Pregnancy. (Teoria surrenale dell'osteomalacia; capsulectomia unilaterale, e gravidanza.) T. Silvestri and C. Tosatti.

114 *Advantages of Treating Hydatid Cyst by Injection of Silver Fluorid. (Cisti da echinococco dello spazio del Retzius guarita col metodo Biondi.) A. Gasbarrini.

113. **Suprarenal Theory of Osteomalacia.**—Silvestri has been repeating Bossi's experiments with removal of the suprarenal capsules in gravid animals to determine whether any tendency to osteomalacia could be detected afterward. He experimented on rabbits and guinea-pigs and was unable to discover evidences suggesting any such influence on the skeleton from unilateral capsulectomy. The animals all aborted, however, in from nine to thirty days; in 2 the abortion was internal, and the embryos were absorbed. This could not have been the result of the operative trauma, as the animals had all recovered completely from this before the abortion occurred. No appreciable morbid changes were found in the ovaries of the animals. It seems probable, he thinks, that osteomalacia is [illegible] result of hyperfunctioning of the ovaries which may be accompanied later by perverted functioning. Suprarenal treatment seems to have a rational basis, as the suprarenals possibly have an antagonistic action to that of the ovaries. This theory is confirmed by recent research, which has shown that while thyroidectomy prevents the development of adrenalin atheroma, castration, on the other hand, brings it on more rapidly and more severely. The abortion in the animals is probably the result of the insufficiency of the chromaffine tissue, similar to the constant abortion of gravid rabbits after thyroidectomy. In conclusion, he gives five arguments against the assumption of the infectious nature of osteomalacia: The fact that in 96 per cent. of the cases the patients are women and in more than 80 per cent. women who have borne children; the negative histopathologic and bacteriologic findings, and the fact that while the osteomalacic bones continue to soften in the cultures of the diplococcus incriminated by Arcangeli, normal bones are not affected in the slightest.

114. **Silver Fluorid Injection in Treatment of Hydatid Cyst.**—In the case described, excellent results were obtained by exposing the non-adherent cyst with a laparotomy and evacuating it by means of a cannula and then injecting about 20 c.c. of a 1 to 1,000 solution of silver fluorid.

Hygiea, Stockholm

July, LXXI, No. 7, pp. 641-767

115 First Medical Degrees Granted in Sweden. (De första doktorspromotionerna vid de svenska högskolorna.) C. Sundberg.

116 Treatment of Syphilis. (Till frågan om behandlingen af den syfilitiska sjukdomen.) E. Welander.

117 Seven Cases of Exophthalmic Goiter in the Insane. (Morbus Basedowi hos sinnessjuka.) V. Wiegert.

Ugeskrift for Læger, Copenhagen

August 5, LXXI, No. 31, pp. 881-910

118 Spring Brace for Deformity of the Spine. (Anvendelsen af et nyt Princip ved Behandlingen af Columnas Deformiteter.) E. Nyrop.

Books Received

All books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. A selection will be made for review in the interests of our readers and as space permits.

TRANSACTIONS OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION. FORTY-SECOND ANNUAL SESSION, 1909. Cloth. Pp., 368.

PROCEEDINGS OF THE THIRTY-NINTH ANNUAL MEETING OF THE NEW JERSEY PHARMACEUTICAL ASSOCIATION, 1909. Cloth. Pp., 251.

MINOR AND OPERATIVE SURGERY INC[illegible] By Henry R. Wharton, M.D., Surgeon to t[illegible] Seventh Edition. Cloth. Pp. 657, with [illegible] $3. New York and Philadelphia: Lea & [illegible]

THE HIGHER FUNGI OF THE CHICAGO REGION. Part 1.—The Hymenomycetes. By Dr. Will Sayer Moffatt. Bulletin No. VII. Part 1, Natural History Survey. Paper. Pp., 156, with illustrations. Chicago: Published by the Academy, June, 1909.

A MANUAL OF LABORATORY METHODS By E. M. Perdue, A.M., M.D., Professor of Histology, Bacteriology and Clinical Diagnosis in Hahnemann Medical College, Kansas City, Mo. Cloth. Pp. 188, with illustrations. Price, $1.50. Kansas City: Burton Pub. Co., 1909.

THE SECRET OF SEX. The Discovery of a New Law of Nature: How Sex is Caused. By E. Rumley Dawson, L.R.C.P., London; M.R.S.C., England, Fellow of the Royal Society of Medicine. Paper. Pp. 64. Price, 50 cts. New York: Cochrane Pub. Co., Tribune Building.

CARE OF MOTHER AND CHILD. By Clarence M. Cheadle, M.D., Member American Medical Association. With an Introduction by Charles Edwin Ruth, M.D., formerly Professor of Surgery and Anatomy, Keokuk Medical College, now of Ponce, Porto Rico. Cloth. Pp., 334. Price, $2. Published by the Author, Ashton, Ill., 1909.

A TREATISE ON THE PRINCIPLES AND PRACTICE OF MEDICINE. By Arthur R. Edwards, A.M., M.D., Professor of the Principles and Practice of Medicine and of Clinical Medicine and Dean of the Faculty in the Northwestern University Medical School, Chicago. Second Edition. Cloth. Pp. 1212, with 100 engravings and 21 plates. Price, $5.50. New York and Philadelphia: Lea & Febiger, 1909.

THE PRACTICAL MEDICINE SERIES. Under the General Editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Postgraduate Medical School. Vol. VI., General Medicine, Edited by F. Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, M.D., Professor of Medicine, Illinois Postgraduate Medical School. Cloth. Pp. 345, with illustrations. Price, $1.50; or $10 the series of 10 volumes. Chicago: The Year-Book Publishers, 1909.